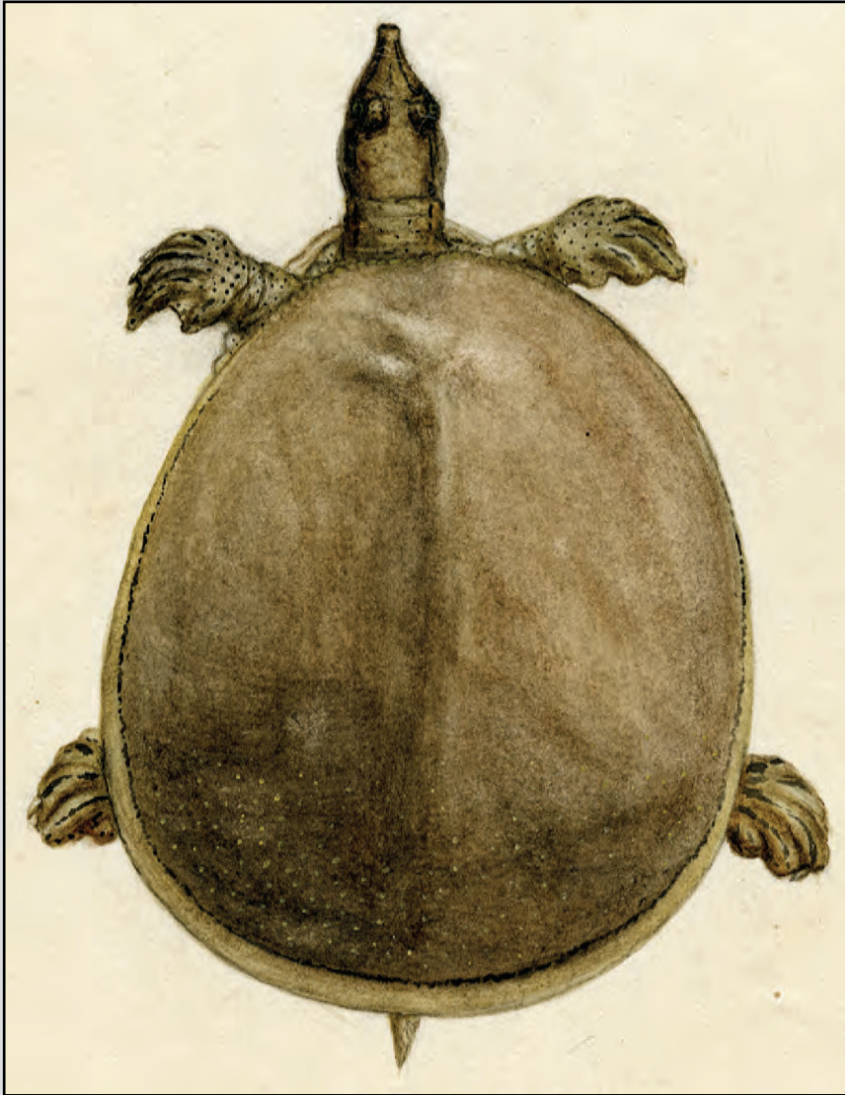


# Bibliotheca Herpetologica

A Journal of the History and Bibliography of Herpetology



VOL. 12, No. 1 AND 2, 2016

International Society for the History and Bibliography of Herpetology



### **The Society**

The **ISHBH** is a not-for-profit organization established to bring together individuals for whom the history and bibliography of herpetology is appealing, to promote the knowledge of related topics among members and the general public, and to promote research. Membership is open to anyone who shares the aims of the Society.

### **Membership**

Regular membership for 2016–2017 is US \$45, Sponsoring US \$75, Institutions US \$75, and Benefactor US \$150. The present two-year period covers *Bibliotheca Herpetologica* volumes 13 and 14. Life Membership is US \$450 starting from 2016, but will also include volumes 9, 10 and 11 (while stock lasts). A membership application form that includes the possibility to order back issues can be found on our website. Payment can be made by personal check or money order in USD drawn on a US bank sent to the Secretary-Treasurer or the Chairperson. Payment can also be made by transfer in euro to Plusgirot, Sweden, IBAN SE83 9500 0099 6042 0455 1206, BIC NDEASESS. Payment by credit card can be made on the website.

Members are encouraged to contribute with articles, essays, news of meetings, hints on antiquarian trade, book reviews and other issues associated with herpetology. The Society organizes seminars, visits to libraries, museums, etc. in connection with herpetological meetings with international participation. The Society works to facilitate informal contacts among members so that the members can meet, offer support in knowledge and transact exchanges of literature.

Correspondence to the Society shall be addressed directly to a Committee member or officer, either by post or email.

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Authors submitting a manuscript do so on the understanding that the work has not been published before and is not being considered for publication elsewhere. Manuscripts are peer reviewed. The language of *Bibliotheca Herpetologica* is English. See the ISHBH website for more details: [www.t-ad.net/ishbh/author.html](http://www.t-ad.net/ishbh/author.html)

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## Society News

### **The Society Meeting in Lawrence, Kansas, USA 2015**

The University of Kansas in Lawrence was the site, from 30 July to 2 August 2015 (with a post congress day on August 3), of the annual meeting of the Society for the Study of Amphibians and Reptiles (SSAR) co-sponsored by several herpetological societies including the ISHBH. This was actually the place where the thoughts that led to the establishment of ISHBH were shaped, namely during the SSAR/HL meeting of 1996.

Monday August 3 was a full day with ISHBH activities starting in the Kenneth Spencer Research Library on the campus. We were welcomed by Karen Cook and Sally Haines who are both librarians at the Department of Special Collections. The immense holding of herpetological books and vertebrate zoology in general in this library has an interesting history. The information provided here is taken primarily from Robert Vosper (1961; reprinted 1982) and as anonymously summarized on the University of Kansas Libraries website "Guide to the Ralph Ellis Collection" (accessed 6 January 2016).

Ralph Nicholson Ellis, Jr., was born June 15, 1908, in Jericho, near Oyster Bay, Long Island, New York, to Ralph Nicholson Ellis, Sr. (1858–1930) and Elizabeth Warder Ellis. Ellis spent his childhood traveling between family estates on Long Island, Maine, and South Carolina. In 1920, Ellis moved with his mother to Berkeley, California, which became the family's primary home. He was affected from birth with illnesses which prevented him from finishing his university studies, but he, probably inspired by his father, was an active naturalist collecting birds, eggs, nests, and mammals from childhood. In his late teenage years his bibliomaniac drives began financed by the family's wealth. He was a devoted book collector on natural history in general, ornithology, scientific voyages, and

Linnaeus, but also included books on herpetology. In order to further pursue his book collecting appetite he went to England from April 1936 and stayed until December 1937 attending book auctions and visiting antiquarian book dealers. In early 1945 he decided to ship his library and correspondences to New York and deposit them at institutions on the east coast. One fifty-foot and one forty-foot freight car loaded to capacity with books, quoted as 65,000 items, left Berkeley for New York but en route halted half way in Lawrence in March 1945. Professor Raymond Hall, a friend from Berkeley when Ralph was young, and now at University of Kansas, had swiftly offered Ralph institutional support from the University and provided room for his library. The books were deposited and a three-year loan contract was signed. Ralph and his caring mother moved to Lawrence. In December the same year he died while in California on a hunting trip. The contract stated that in such circumstance the ownership should be passed to the University. Ralph's mother approved the bequest but his widow contested the arrangement. The State Supreme Court decided in April 1950, after several trials, that the books belonged to the University of Kansas. Illustrated classical herpetological books made up an impressive part of the collection now kept at the Kenneth Spencer Research Library, Department of Special Collections on the campus and is a real treasure for herpetologists with an appeal for history.

Already in 1996 an exhibit showing a selection of the herpetological books was arranged by Sally Haines, coinciding with the SSAR/HL herpetological meeting at the University campus. In the year 2000 a gallery guide to the exhibit was published by SSAR called "Slithy Toves" (taken from the poem "Jabberwocky" by Lewis Carroll). This 180-page book richly illustrated in color features many of the books and descriptions from the exhibit as well as a bibliography of the illustrated herpetologi-



cal books in the Kenneth Spencer Research Library. The entries have relevant passages from *Alice in Wonderland* or other writings of Lewis Carroll (book review in the International Society for the History and Bibliography of Herpetology Newsletter and Bulletin 3(1):9–10, 2001). SSAR graciously decided to hand out free copies from the excess stock at this meeting and the author, Sally Haines, kindly made herself available for a book signing.

This time, the Library arranged another large exhibition open to the public called “All Creeping Things – A History of Herpetological Illustration” with glass cases displaying open classical books on herpetology as well as several informative posters on the books but also on techniques how these wonderful illustrations were made. But not only that: just for the ISHBH delegates



the librarians brought out the very best of the herpetological holdings for us to flip through, examine and inquire about. In many cases members of the society were able to supply additional valuable information about the books. There were moments to sit down and participate in active discussions connected with collecting, archiving, and preserving books. The visit at the library had attracted 26 members and guests and encompassed two sessions that lasted for several hours with

an intermediate shared lunch.

There were just too many books available for the delegates to carefully study to list here, but among the real jewels were a colored version of Albertus Seba (1734–1735) *Locupletissimi rerum naturalium thesauri*,... volume 1 and 2, Mark Catesby (1731–1743) *The Natural History of Carolina, Florida, and the Bahama Islands*, Carl Linnaeus (1735) *Systema Naturae* first edition and his (1754) *Museum S. R. Mtis Adolphi Friderici regis*. Gathered on one table were the books and the dissertation that contain the images of the animals that make up the Society logo (see our website under “The ISHBH Logo”, <http://t-ad.net/ishbh/Madsen.html>). Our deep thanks go to the librarians of the Special Collections, Karen Cook and Sally Haines, who so kindly prepared the exhibition for us and volunteered to share their time and knowledge. Sally Haines is now a valuable Life-time member of ISHBH.

**Richard Wahlgren.**

#### REFERENCE:

Vosper, Robert. 1982 (1961). A Pair of Bibliomanes for Kansas: Ralph Ellis and Thomas Jefferson Fitzpatrick. Lawrence. University of Kansas Libraries. 1–19.

## The Society Business Meeting 2015

The 2015 Business Meeting was held on August 3 in Lawrence, Kansas. The meeting took place with the traditional shared luncheon in the restaurant at The Oread hotel and was this year attended by 11 members and 15 guests. There were no elections of officers this time.

## Next Society Meeting

The next meeting is planned to coincide with the Joint Meeting of Ichthyologists and Herpetologists in New Orleans, Louisiana, USA that take place 6 to 10 July 2016. Details will be announced on our website well in advance.

## Bibliotheca Herpetologica Available Open Access

All issues of the journal *Bibliotheca Herpetologica* except those published for the current membership period are now available open access as PDF on our website. Authors are already now allowed to publish their recent



articles on their own websites or of their institutions.

## New Membership Period from 2016

From 2016 starts a new 2-year membership period for ISHBH. We will personally address all members on email or mail about the membership status as it has turned out that quite a few members have paid twice for the past period. We will also advise on new options for paying. The membership dues will remain unchanged.

## ABOUT THE COVER

“*Trionyx ferox*” from Berlandier’s manuscripts, reptiles, plate VI (part), watercolor attributed to Berlandier himself. Currently *Apalone spinifera emoryi* (Agassiz 1857). The pale rim strongly broadened along the rear border of the shell is diagnostic of this subspecies, and the small whitish dots on the rear of the back are typical of the juvenile and male.

According to the relatively narrow head and the visible tip of the tail it is probably an adult male. Smithsonian Institution, Archives, Record Unit 7052, Box 12, Folder 15, Image SIA 2014-01826, with permission. (*This turtle will be introduced in the next issue*). **Roger Bour, Paris**



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# A Force to be Reckoned With in Borneo: Tom Harrisson and His Herpetological Legacy

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**Abstract.** Tom Harrisson (1911–1976) has been described as one of the most brilliant and controversial polymaths of the 20th Century, with a stellar résumé as an explorer, ethnologist, archeologist, anthropologist, social science innovator, guerilla fighter, administrator and conservation biologist. At the same time, he was eccentric, belligerent, confrontational, and hated by many who interacted with or worked for him. As Curator of the Sarawak Museum in the late 1940s, he began extensive observations on the life history of the green turtle (*Chelonia mydas*) and other sea turtles in Southeast Asia, particularly in the Turtle Islands of Sarawak, and invited other scientists to extend his initial work. He became one of the pioneers in sea turtle research and, with Archie Carr and a few others, helped put sea turtle biology into a modern scientific framework. He also published or co-authored among the first papers on the Borneo earless monitor (*Lanthanotus borneensis*) based on living animals. Although largely unknown today, Harrisson contributed significantly to conservation, particularly in drawing attention to the plight of sea turtles and other species and native cultures in Southeast Asia.

Few people today could ever imagine a life even remotely similar to that lived by Thomas Harnett Harrisson (26 September 1911–16 January 1976) (Figures 1, 2). There are many accounts of his accomplishments: master organizer of ornithological information prior to attending university and while mostly otherwise inebriated at Cambridge (1930–1932, never graduating); Oxford University expeditions to Arctic Lapland and the Outer Hebrides (1930–1931); Oxford University expedition leader in Borneo (1932, at age 21) (Harrisson, 1938) and to the New Hebrides (1933–1935) (Harrisson, 1937, 1943); founder of Mass Observation, the first attempt to analyze national public opinion using a modern survey and observational approach (1935–1942) (Madge and Harrisson, 1939; Harrisson, 1961a, 1976a); guerilla leader and post-war administrator in Borneo during World War II (1942–1946) (Long, 1989; Courtney, 1993); curator of the Sarawak Museum and government ethnologist (1947–1966) (Das, 2003; Harrisson, 1959a, 1959b,

1963a, 1970); holder of appointments to Cornell University and the University of Sussex (1967–1976). Never to be satisfied by a single pursuit, he became an authority on Southeast Asian ethnography, anthropology, archeology, paleontology, guerilla warfare, social data analysis, and conservation.

Harrisson legends are many, particularly those associated with his years spent in the New Hebrides and Borneo. He spent a year (1933–1934) “going native” on Malekula Island in the New Hebrides in order to immerse himself in the cannibal cultures of Big Nambas and Laus societies (Harrisson, 1937, 1943), during which time he was described as looking like Jesus Christ, wearing only a native cloth around his waist, no shoes, long hair, a beard, and carrying a staff (Heimann, 1999). He served as Acting District Agent in the British Colonial Service for the northern New Hebrides, successfully pacifying the Big Nambas. He made a classic documentary film on the natives of New Hebrides in cooperation



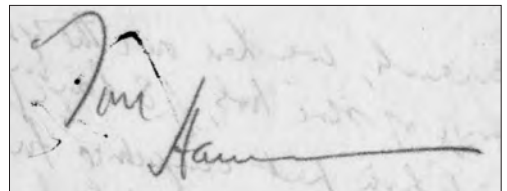
**FIGURE 1.** Tom Harrison at Talang-Talang Island, 1961. From left to right: observing hatchling green turtle (*Chelonia mydas*); recording field observations; releasing hatchling green turtles. Photos courtesy of the Sarawak Museum (reprinted with permission).

with Douglas Fairbanks Sr. With a small number of Australian commandos, he organized a native army in Sarawak to effectively restrict the Japanese to coastal areas during WWII and contain isolated Japanese forces after the surrender. In 1962, he led a native force of Kelabits and Dyaks from Sarawak to help put down a rebellion in Brunei. He became an expert in Asian ceramics and, in 1958, he discovered the then oldest known human skull (ca. 40–44,000 years BP; Barker et al., 2007) at Niah Great Cave on Borneo.

Along the way, Harrison received the Distinguished Service Order (D.S.O., 1947) for service in WWII, Officer of the Order of the British Empire (O.B.E., 1959) for his work as curator of the Sarawak Museum, the Royal Geographical Society Founder's Medal (1962), and a Palm d'Or at the Cannes Film Festival for his documentary film *Birds and Nest Soup* (1957), one of six films he produced on the wildlife and peoples of Borneo. His life is recounted in fascinating detail by his biographer and former neighbor in Sarawak (Judith Heimann, 1999) and in a six-part BBC4 documentary narrated by David Attenborough entitled *Tom Harrison – The Barefoot Anthropologist* (2007; available online at <https://www.youtube.com/watch?v=SVtGT6g4-64>). Additional information and reminiscences are in many obituaries and newspaper articles

(e.g., Chin, 1976 and others in the same issue; Hutchinson, 1976; other essays and recollections recounted by Heimann, 1999).

By all accounts, Harrison was a difficult person to be around or for whom to work. In interviews in the BBC4 biographical documentary, he is described as a classic British eccentric, a drunkard, arrogant, chauvinist, belligerent, confrontational, competitive, prone to rages, a bully, and an individual who loved to shock contemporary mores. While at Cambridge in the early 1930s for example, he painted his toenails with bright nail polish and walked around campus in open-toed shoes (Heimann, 1999). At the same time, he was fiercely protective of his soldiers and employees if anyone in higher authority or from the “outside” (politicians, administrators, military



**FIGURE 2.** Tom Harrison's signature on letter to Nicolas Mrosovsky discussing matters related to the IUCN Marine Turtle Specialist Group, 7 February 1974. Tom Harrison Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA.

commanders in particular) questioned their abilities, loyalty, or character. Unfortunately, those under his thumb rarely saw this side of him and many came to despise him. For example, during guerilla operations in the Borneo interior, he refused to let his men wear shoes, knowing that if the Japanese observed boot prints they would know non-native operatives were in the area. He further refused to allow his men access to parachuted food supplies and made them live off the land. While this caused great animosity and outright hatred among the soldiers, it won admiration from his native Kelabit warriors who accepted his command with respect. None of his Australian soldiers were ever killed or captured, and the native warriors proved vital to the success of Allied military operations. Harrison was far more interested in outcomes than in the personal sensitivities of enlisted men or officers, staff, or established academics.

Not all of his contemporaries despised him; some thought him brilliant, insightful and dedicated (e.g., F. Wayne King, personal communication, described him as a good friend). Harrison corresponded extensively with academics (who often looked down on him because of his lack of any academic degree), social scientists, writers, adventurers, interested persons, and government officials. Kraig Adler (personal communication), for example, recalls corresponding with him and Neville Haile in the late 1950s and early 1960s when Adler was still in high school. Haile would send him little boxes with live reptiles, including a slug-eating snake and a baby monitor lizard. These came unannounced, and the animals were never held in a bag inside the box. When Adler arrived home from school one day, he found a box awaiting him with a very active lizard scratching to escape.

Harrison's correspondence with sea turtle biologists (notably Archie Carr, Robert Bustard, David Caldwell, George Hughes, E. Balasingham, Nicholas Mrosovsky, J.P. Schulz) was free of acrimony and was professional.

He readily exchanged observations, asked questions, and occasionally corrected errors in publications without the venom he was known to direct toward others (Tom Harrison Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA). Although he freely exchanged information, he was resentful when "his" ideas turned up in the writings of others.

Harrison's confrontational personality won him no friends wherever he went, especially when he challenged established authority or ideas (Heimann, 1999). This was particularly true of colonial Britain from the 1930s–1950s. He was intensely interested in protecting native cultures rather than characterizing them as savage or uncivilized. Indeed, the title of his book *Savage Civilisation* (1937) refers not to the natives of New Hebrides, but to Western Civilization intent on "civilizing" them. He could only understand native cultures by immersing himself within their societies, not by looking in from the outside with preconceived ideas and methodology. To this day, his memory is revered in the highlands of Borneo because of the respect he showed for Kelabit culture both during and after WWII (see aforementioned BBC4 documentary).

Harrison later adapted his total immersion approach to understanding culture within England, recording the thoughts and behavior of the common people rather than the rigid English intelligentsia. Although his books were often quite popular, they were also frequently criticized or dismissed by the academic or political establishment, especially when his conclusions did not fit into accepted ideas or the political ideology of the day. History has shown, however, that he was more often than not correct, and much of his approach to anthropology and social science research was far ahead of its time (Heimann, 1999). Harrison was married three times to Europeans, including the well-known orangutan conservationist Barbara Harrison, but he also had a "local"



Kelabit wife. He and his third wife Christine were killed in a road accident in Thailand on 16 January 1976 while returning from a vacation at a game reserve.

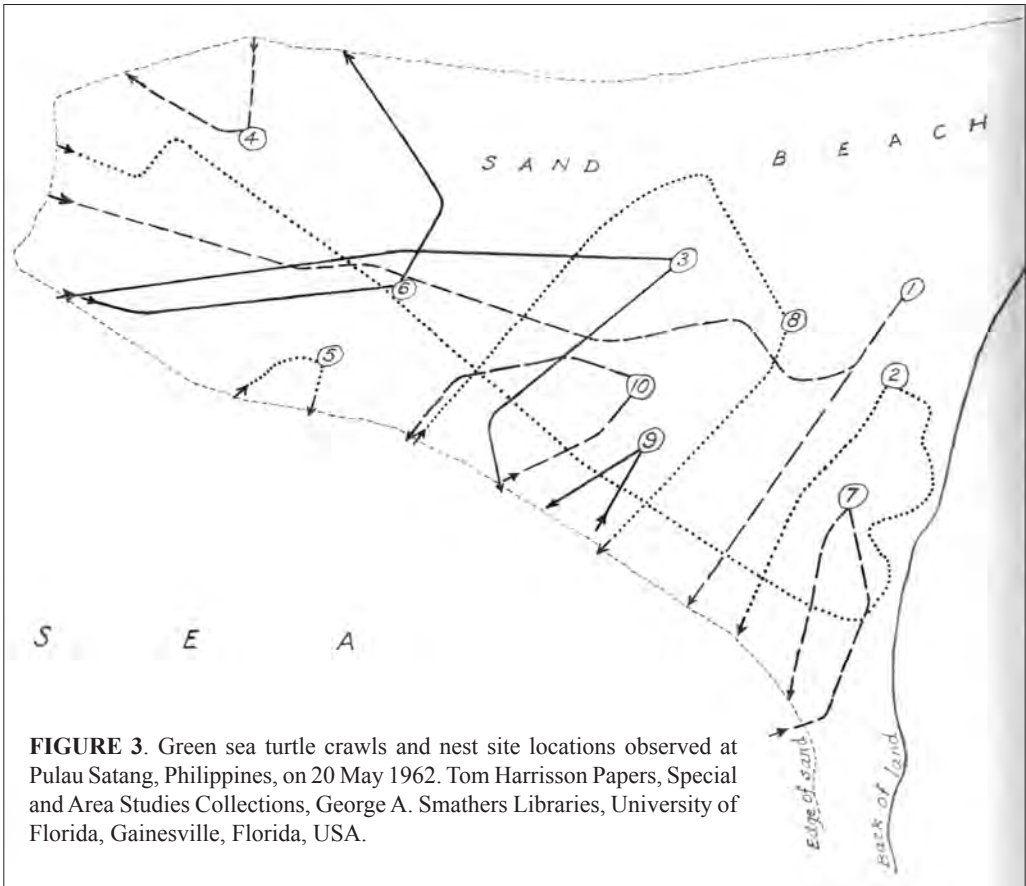
Tom Harrisson was not a herpetologist, but he conducted some of the earliest work on three species of sea turtles and the Borneo earless monitor, *Lanthanotus borneensis*. As Curator of the Sarawak Museum, his duties extended to editorship of the *Sarawak Museum Journal* as well as administrator of the green turtle (*Chelonia mydas*) egg collection industry on the three Turtle Islands (principally Talang Talang Besar and Satang Besar; now Talang-Satang National Park) off Sarawak's southwest coast (see Hendrickson, 1958, for a history of egg collection in the Turtle Islands). He also had responsibility for protecting national parks, game reserves, and ancient monuments. With these duties, he enlisted local help (Neville Seymour Haile, a geologist, was made honorary curator of amphibians and reptiles) and encouraged research by professional scientists.

For example, Robert Inger (Field Museum of Natural History), who first visited Harrisson in Borneo in 1950, gained insights into Bornean natural history and culture from discussions with Harrisson, and often received logistical assistance from him on subsequent research projects (Inger, personal communication). Inger later brought one of his graduate students, F. Wayne King, to Borneo who spent six months there studying the herpetofauna (recounted by Heimann, 1999). King (personal communication) suggests Harrisson's advice and assistance might be considered part of his herpetological legacy, leading to the description of a new gecko (Inger and King, 1961), identification of Paleolithic amphibian and reptile remains from Niah Great Cave (King, 1962), a summary of the diversity of amphibians and reptiles in Borneo (Lloyd et al., 1968), insights into squamate evolution (Mertens, 1961, 1962), and Inger's (1966) first monograph on the amphibians of Borneo. While

Harrisson allowed some researchers to conduct studies in Borneo, however, many others were denied permission whom he felt would offend any of the indigenous cultures (F.W. King, personal communication). *Rhacophorus harrissoni* is named in his honor (Inger and Haile, 1959).

Harrisson assumed oversight and management of egg collection in the Turtle Islands in 1947, although he may have become interested in green turtle nesting there on his first trip to Borneo (de Grandmaison, 1964; this article gives a date of 1935, but it seems likely 1932 was correct inasmuch as Harrisson was in the New Hebrides in 1935). He immediately became concerned that the then current way eggs were being collected and distributed had no basis in biological knowledge, and he instituted a management protocol that required a portion of the eggs to be reburied in protected hatcheries to ensure some recruitment. Already in the mid-1940s, the number of nests deposited appeared to be in decline, and that decline continued after Harrisson took over. In 1951, he invited John Hendrickson from the University of Malaysia to begin a systematic study of the life history of green turtles. Nothing at that time was known of green turtle life history in Southeast Asia, not even the most basic information on population size, foraging and interesting habitats, the number of eggs deposited per female per season, or migration patterns.

Hendrickson initiated an ambitious program, including the first use of monel metal cattle ear tags that could be attached to a turtle's flipper for subsequent recognition without being lost to corrosion. In the first extensive tagging season (1953), ca. 1,500 turtles were tagged, and by program's end in early 1955, more than 4,000 turtles had been tagged (although Hendrickson later recalled only 2,720; Rieser, 2012). Hendrickson published the results of his research in an extensive paper (1958), a classic in the early life history studies of green turtles. The relationship between Har-



**FIGURE 3.** Green sea turtle crawls and nest site locations observed at Pulau Satang, Philippines, on 20 May 1962. Tom Harrison Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA.

risson and Hendrickson was not harmonious, however, as Hendrickson accused Harrison of using his field notes and data and publishing quick summaries in the *Sarawak Museum Journal* and *Nature* (Heimann, 1999; Reiser, 2012). This seems a possibility. Harrison had a long-standing habit of sometimes not giving full attribution to observations made by others acquired under his supervision. The situation was not helped when Carr and Caldwell (1956) mistakenly attributed the first use of monel tags to Harrison rather than Hendrickson (Rieser, 2012). Curiously, there is no correspondence with Hendrickson in the Harrison Papers, nor any mention of Hendrickson's work except for illegible notes on a copy of Hendrickson's observation on thermal ecology.

The question of authorship may not always be that simple, however. Harrison never traveled in the field without his notebook, and if he did not have his notebook he appeared to use whatever scrap of paper available. The Tom Harrison Papers at the University of Florida are filled with field notes and trip reports recording a wealth of information gathered during his many trips to the Turtle Islands and elsewhere in Asia. Harrison's handwriting is nearly illegible, but fortunately many of his notes and reports were typed later and are included with the originals. The majority of observations were on green turtles, but he also recorded data on hawksbills (*Eretmochelys imbricata*) and "loggerheads" (*Lepidochelys olivacea*, using the common local name of the time). He frequently included tables with data and illustrations depicting such observations as the number of eggs, size of turtles, crawl

paths, and the locations of nests on a beach (Figure 3). In the Harrison Papers, there are even receipts for expenses incurred during field trips. Harrison's excursions did not always involve work, as both he (Harrison, 1964e) and Heimann (1999) recount the raucous drunken Semah feast that was held annually in connection with the Sarawak Turtle Board's meeting each May. Let's just say, it involved a great deal of alcohol, a battle of rotten green turtle eggs, singing, all-night dancing, and a many course native feast.

Harrison's papers in the Sarawak Museum Journal (see bibliography) and, especially, his publicizing of the plight of the green turtle to Europeans (Harrison, 1962a, 1964b, 1964c) caused considerable attention to the harvest of green turtle eggs and adults, both in Sarawak and worldwide, and the likely effects it was having on wild populations. The response was immediate, with many individuals from the public and biological community expressing concern and those engaged in turtle harvest expressing outrage, claiming that harvesting had no effect whatsoever on the status of the species (correspondence in the Tom Harrison Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA). Harrison's response often was terse and did not allocate commercial interests any credibility (e.g., Harrison, 1964d). His studies and ideas readily influenced Archie Carr and others (Reiser, 2012) and led to his appointment as IUCN Marine Turtle Specialist Group (MTSG) co-chair with Carr in 1974. Harrison played an important role in reorganizing and revitalizing the MTSG.

Harrison published most of his observations on sea turtles in the Sarawak Museum Journal (a series of 18 "Notes on Marine Turtles") with another 10 in other outlets. Additional papers addressed green turtles found in archeological sites (Harrison and Medway, 1962) and the use of sea turtle bones in ceramics or as tools to shape ceramics (Harrison, 1965b, 1966a,

1968, 1969c). He also published many articles in local and international news outlets describing his research or pointing to the decline of sea turtles and need for protection (see bibliography). Two papers addressed other reptiles (Harrison and Haile, 1961a; Harrison, 1966b), and an unpublished book manuscript entitled *Turtle Island* is in the Tom Harrison Papers at the University of Florida (Figure 4); a note says the book was to be published by Wiedenfeld & Nicholson in 1967 (letter to George Hughes, 31 May 1966), but it never was. Manuscripts were written and revised in almost illegible script (Figures 5, 6).

Harrison with N.S. Haile and his wife Barbara was among the first observers to record basic information on the little-known Borneo earless monitor based on wild-caught specimens (6 papers). Tom discovered that when pepper farmers tilled their crops they dug up *Lanthanotus*. He then offered a monetary reward to any farmer who caught an earless monitor alive (F.W. King, personal communication). No one knew what *Lanthanotus* ate, but because they were fossorial, biologists thought they fed on earthworms or similar prey. Tom tried to keep them alive on a variety of diets, one of which was sea turtle eggs. He claimed the monitor ate raw egg offered in an open dish, but in fact the lizard simply crawled through the egg and smeared it in the sand (F.W. King, personal communication). In 1963, Harrison sent four live *Lanthanotus* to Robert Mertens at the Senckenberg Museum in Frankfurt, Germany, where it was discovered they spent much of their time in water and would eat strips of North Sea plaice (*Pleuronectes platessa*), and later cod (*Cadus morhua*) (see Mertens, 1964, 1966). Although two of the *Lanthanotus* had died prior to the introduction of fish, the remaining two were alive at least through 1966 (F.W. King, personal communication). Tom also sent a live *Lanthanotus* to Wayne King, then at the Bronx Zoo, where it also ate fish cut in strips. The diet in the wild is still said to consist of earthworms and crustaceans (Das, 2010).

TH. 22 July 1969

*defuse color both sides (copy 15 R copy 16)*

*Shells with white & blue spots*

*Prefer defuse*

**TURTLE ISLAND : Contents (Revised)**

*Don't know, 9 islands of K. P. in the white ATMs 5/11/69*

**PART A : A SEA OF TURTLES**

**I. The Talangs:** In Great Bay.  
Mainland Borneo: west coast; Mt. Poi.  
Sematan's fishermen, sail, cf. steam.  
The Islands set in coral sea; climate, rocks.  
Beaches and Coconuts.  
Fauna and Flora.

**II. Turtled Islands:** Beach Scene, August & March 1950.  
The turtles (species).

**III. The Turtle-watchers:** Mundin, Sepian, Jahaya.  
Semah, beliefs, Islam.

**IV. The Sea:** How the female finds the islands.  
Sea and shore factors: monsoon, tide, salt, silt, season etc.  
Senses and disturbances.

**V. Bager Bull in the Channel:** Copulation, sex ratios.

**VI. ASHORE:** Crawl, dig, lay, the nest;  
clutch, cover, back to sea - and away...  
Nocturnalism and day.  
Repeat nesting; tagging returns. *part taken into IV*

**VII. The Eggs:** To Kuching and sale: profits, organisation.  
To replant (and why); conservation (how done and results).  
Flagging, boxes, wild nests left...  
Temperature and nest climate; inarticulation; fertility.

**VIII. Hatchlings:** Hatchling emergence;  
To sea and on; experiments; sight, colour.  
Tanks, growth, health, food, predation.

**IX. The Years Cycle:** Seasonality and its effects; cf. weather. ~~stom~~

FIGURE 4. Portion of the table of contents for a planned but never published book entitled *Turtle Island*. Tom Harrison Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA.

One might think that the title of Curator would involve collecting and properly managing the zoological collection at the Sarawak Museum, but that was not the case. Harrison collected reptiles only incidentally to his mammal collections; these were reported on by Tweedie (1949). Under Harrison's directorship, the collection deteriorated. Many of the specimens were of great historical value, yet specimens rotted without appropriate care. Harrison did not personally add specimens to the

zoological collection, and the ledger of collections from the Museum shows hardly any entries during his time. Specimens that were donated were often accepted without data. For some important specimens, only pencil-written notes on the back of cigarette wrappers were thrown into alcohol bottles (I. Das, personal communication). Clearly, Harrison either lacked knowledge of proper herpetological curation techniques, or he just chose to ignore them and the specimens.



**FIGURE 5.** Notes on Borneo insect migrations between the Sarawak mainland and Tulang Tulang Besar with signature. Tom Harrisson Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA.

Today, the legacy of Tom Harrisson is debated, but it seems clear that he was a force to be reckoned with for sea turtle conservation at a time when it was desperately needed. Even without academic credentials, he had the foresight to identify research gaps necessary to manage populations, and if he could not do the work himself, he was able to encourage highly innovative scientists to start it. He was certainly a pioneer in sea turtle research when very few individuals were in the field attempting the seemingly impossible task of gathering life history data on such wide-ranging and enigmatic reptiles. His insights were often ahead of his time. For example, on one of his unpublished reports he speculates on what might drive hatchling sea turtles to the ocean. Was it an innate sense, the depth and slope of the beach, magnetic fields, reflected light, the sound of waves, or something else? All of these mechanisms have now been examined, and each plays a role in the life history of adults and hatchlings (e.g., Lohmann et al., 1997; Lohmann et al., 2013). Much of the ambivalence concerning his contributions likely stems from his abrasive personality, although only a few biologists are alive today that directly interacted with him. It seems probable that a thoughtful retrospective of his contributions

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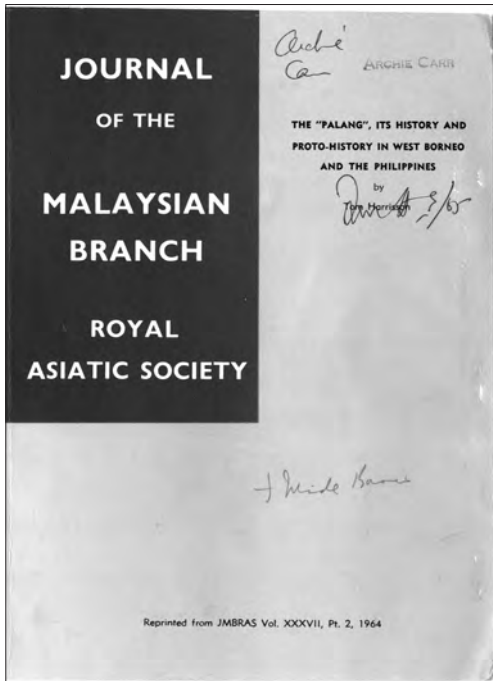
Borneo Insect Migration to & from  
Sea  
by Tom Harrisson

Very little is known about the specific  
migrations in the area. I have  
ventured to collect the insects on  
reeds near the estuary. Insects  
usually found 12 years previous to  
this. I found a few along a path  
a mile from the shore. I have  
I have repeatedly to cross the river  
by day. I have observed  
insects 4-6 miles deep in the  
forest. I have seen of some of the  
insects - (I have seen the white, black,  
and all the others.)  
I have only seen two insects which  
could reasonably be regarded as

2.5g - weight of baby loggerhead (14.6.65)  
A - 2 days old (the minimum age for a baby)  
Hatched on Saturday 25.6.65 at 4.30 am.  
43 young, out of 103 eggs (incubated 65.65  
= 50 days)  
These 43 young weighed on 27.6.65 at 8 am = 24g. (all)  
Average weight regularly 5g per 24g or a  
little less (once 5g per 24g).  
They fed individually 1 in 4 g. and 1 in 3 g. at cloudy dawn;  
first feed was under 2g each.  
Total 43 fed 21 ounces (incubated less).  
Compare here to loggerhead  
43 = 21 ounces at 2 days +  
And from in same area (usual)  
42 = 34 ounces at 2 days + 1 day + 1 day  
Chick 6.6.65 - 1 day + 1 day + 1 day  
[All these 43 have 50% more than lost 1/2 of 43 each]  
At 1st - 1 day + 1 day + 1 day  
Green - 1 day + 1 day + 1 day  
Loggerhead (incubated) 25.6.65 at 6.55 am = 23g. (all) but =  
Slightly more (1 day + 1 day + 1 day)  
B - 2 months old loggerhead X  
Compare here 2 months old (hatched 14.6.65 to  
25.5.65) 25.4.65 - all weight  
1 1/4 ozs. each (all at 1/2)  
This is much more than 2 months -

**FIGURE 6.** Draft manuscript with corrections on the size and weight of hatchling “loggerheads” (*Lepidochelys olivacea*). Tom Harrisson Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA.





**FIGURE 7.** Inscribed reprint from Tom Harrison to Archie Carr. Tom Harrison Papers, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida, USA.

will result in a more balanced assessment of his accomplishments and failures, as it has in ethnography and anthropology (see Epilogue in Heimann, 1999).

## NOTES

The Tom Harrison Papers archived in the Special and Area Studies Collections, George A. Smathers Libraries, at the University of Florida consist of 8 boxes of material (correspondence, field notes, manuscripts, published papers, newspaper articles) relating to Harrison's activities with sea turtles and as IUCN MTSG co-chair. Some of these papers were sent to Archie Carr in 1975 by Harrison's ex-wife Barbara. Following Harrison's death, Carr accepted additional Harrison papers. After Carr died in 1978, these were presented to the Smathers Library by Marjorie Harris Carr, Archie's widow. A general listing of the con-

tents of the Harrison papers is available online (<http://web.uflib.ufl.edu/spec/manuscript/guides/Harrison.htm>). It appears that Harrison frequently sent Carr reprints on a variety of subjects (Figure 7); some of these are in the Tom Harrison papers, but others are in the herpetology library at the Florida Museum of Natural History. The University of Florida has a complete set of the *Sarawak Museum Journal*, likely originating from the Carr-Harrison collaboration. Harrison frequently sent copies of the journal to colleagues.

Citations of Harrison's papers are frequently confused in the sea turtle literature; even Harrison sometimes incorrectly cites his own publications. This may result from the difficulty in obtaining original copies of the *Sarawak Museum Journal* or the fact that the journal sometimes included both old series and new series numbering in the same issue. Photographs were not on numbered pages, and sometimes were placed in different locations in the journal, perhaps to include them together for ease of publication. Some publications on *Lanthanotus* that have been attributed to Tom Harrison were actually published by his second wife Barbara (e.g., B. Harrison, 1961, 1962). The *Sarawak Museum Journal* also includes Tom Harrison as author of a paper on snake bite in the table of contents of Volume 11, but the actual author was N.S. Haile (Haile, 1963). In order to eliminate confusion, a complete, verified bibliography of Harrison's herpetological publications is provided as an appendix.

## ACKNOWLEDGEMENTS

I thank the library staff at the Smathers Library, University of Florida, for access to the papers in the Tom Harrison archive. Ipoi Datan, Charles Leh Moi Ung, Ron Orenstein, Ian Swingland and Eileen Yen provided much needed assistance in finding photos of Harrison. W.B. Barichivich assisted in photo formatting. Kraig Adler, Indraneil Das, Marian Griffey, Robert Inger, F. Wayne King, André

Koch, and Joseph Mitchell provided comments on the manuscript; Adler, Das, Inger and King provided additional information or personal recollections.

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\* Two “Notes on Marine Turtles” were numbered 5, but there was no number 6.

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# Where and when was Jean Louis Berlandier born? - Notes on Jean Louis Berlandier. I.

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*I am compelled to emphasize to any interested scholar or prospective student that after this, the third treatment of the story of Berlandier, the subject remains a rich and almost untouched area.<sup>1</sup> To those who would delve more deeply, I can guarantee rewards for their efforts.* Cornelius Herman Muller (1980)

*Es muy posible que en los archivos respectivos se encontrara la partida del bautismo de Berlandier, con el nombre de sus padres y el de la pequeña aldea donde nació, para así complementar la biografía berlandiana.<sup>2</sup>* María del Pilar Sánchez, in Sánchez Osuna (2004)

**Abstract.** For a century and a half, imprecise place and date of birth have been constants in publications introducing Jean Louis Berlandier. Most often one can read that this naturalist was born in about 1805, near the Fort de l'Écluse, in the département of Ain, France. From archival documents, it could be shown that he was born on the 1<sup>st</sup> of August 1803 near a place also called *Le fort de l'Écluse*, in the center of Geneva, then a French city. In addition to data leading to this clarification, some events on his Geneva youth are presented, as well as the origin of his parents. Jean Louis Marie Berlandier was the son of Jean Berlandier (1770-1830), a native of Boulbon (Bouches-du-Rhône, France) and Marie Anne Guiardel (1764-1844), a native of Farges (Ain, France). All three lived in Geneva until the final departure of their son to Mexico in 1826. Finally Berlandier died drowned on 22 April 1851.

**Keywords:** Berlandier, Jean Louis, Luis, Botany, de Candolle, Fort de l'Écluse, Geneva, Farges, Boulbon, Texas, Mexico.

## Où et quand est né Jean Louis Berlandier (1803-1851) ?

**Résumé.** Un lieu et une date de naissance imprécis sont des constantes dans les publications qui, depuis un siècle et demi, présentent Jean Louis Berlandier. Le plus souvent on peut lire que ce naturaliste est né vers 1805, à proximité du Fort de l'Écluse, dans le département de l'Ain. À partir de documents d'archives, on montre qu'il naquit le 1<sup>er</sup> août 1803 près d'un lieu nommé *Le fort de l'Écluse*, dans le centre de Genève, ville alors française. En complément des éléments menant à cette double réponse, on présente quelques événements concernant sa jeunesse genevoise, ses parents et leur origine. Jean Louis Marie Berlandier était le fils de Jean Berlandier (1770-1830), originaire de Boulbon (Bouches-du-Rhône, France) et de Marie Anne Guiardel (1764-1844), native de Farges (Ain, France). Tous les trois vécurent à Genève jusqu'au départ définitif du fils pour le Mexique en 1826. Finalement Berlandier mourut noyé le 22 avril 1851.

**Mots clés:** Berlandier, Jean Louis, Luis, Botanique, de Candolle, Fort de l'Écluse, Genève, Farges, Boulbon, Texas, Mexique.



## JEAN LOUIS BERLANDIER IN MEXICO

The name of a frog, *Lithobates berlandieri* (Baird, 1859), and that of a tortoise, *Xerobates berlandieri* Agassiz, 1857 [*Gopherus berlandieri* (Agassiz, 1857) in TTWG 2014], suggest to herpetologists that a naturalist named Berlandier once lived. The ranges of these species overlapping the border between the state of Texas in the United States and those of Tamaulipas, Nuevo León and Coahuila in Mexico bring to mind that this Berlandier was particularly active in that area. Any botanist knows the New World genus *Berlandiera* De Candolle, 1836, the flower of which gives off an odor of chocolate, and must know that Berlandier was indeed a naturalist, one of the first to collect plants in this region and to describe several species. Jones *et al.* (1997: 4) recognized Berlandier as the *Father of Texas Botany*.<sup>3</sup> However, for a historian, American or Mexican, Berlandier is first and foremost the explorer who participated in the *Comisión de Límites*, the commission which set the boundaries between the United States and Mexico (Sánchez 1926; Geiser 1937).<sup>4</sup> And for an ethnologist, he was a competent observer of the Native Americans of Mexico and Texas, who noted and figured the customs of tribes today decimated or extinct (Ewers 1969).

Jean Louis Berlandier, simply Louis then later Luis, who lived for twenty-five years close to that border on the Mexican side, was one and the others, and much more. His multidisciplinary work, a long time forgotten, once criticized as a result of misunderstandings, is still being discovered today through his papers. Most of our knowledge of his personal Mexican life is only based on a letter sent in November 1854 by Lieutenant (later Major General) Darius Nash Couch (1822-1897) to Spencer Fullerton Baird (1823-1887) at the Smithsonian Institution, the letter was published by Dall (1915: 321-322). Sent by the Natural History Society of Geneva in 1826 for a mission of collecting,

Berlandier settled in 1829, at the end of this mission, in Matamoros, where he created his own museum<sup>5</sup> and practiced medicine and pharmacy; he lived with a Mexican, Beatriz Maria Concepción Villaseñor (or Villa Señor), with whom he had several children.<sup>6</sup> Appointed as Captain in the Mexican army during the war against the United States (1846-1848), he treated the wounded and acted as an interpreter. He died accidentally in 1851, drowning in the Rio San Fernando, some 150 km south of Matamoros. According to Couch (in Dall 1915: 322) Berlandier had left Matamoros in May or June; however, his death is reported in April (Osuna Sánchez 2004: 42), in mid-spring (Lawson 2012: 195), most often in summer (e.g., Alphonse de Candolle 1862: 338, note; Lighter and Cavillier 1940: 36) or December (Kaye 2010: 101). The precise date was published in the newspaper *Indiana State Sentinel*, dated 29 May 1851 (Anonymous 1851): “Dr. Louis Berlandier a distinguished citizen of Matamoros, Mexico, was drowned on 22d ult.” (the information just took one month to reach Indianapolis from San Fernando). Thus the unfortunate Berlandier died on Tuesday, April 22, 1851.

A great number of biographies have been devoted to Berlandier, several very recent, from a few lines to over a hundred pages; there are often mixed historical facts reported in contemporary documents, including many manuscripts of Berlandier himself and events more or less fictitious, from the imagination of the authors: de Candolle 1830, 1862; Hemsley 1887; Alcocer 1899; Geiser 1937; Briquet and Cavillier 1940; McKelvey 1956; Ewers 1969; Muller 1980; Campbell 1983; Chiszar *et al.* 2003; Moll 2003; Flores-Villela *et al.* 2004; Sánchez Osuna 2004; Waldman and Wexler 2004; Haecker and Mauck 2009; Baker 2010; Davis and Davis 2010; Hartmann 2010; Kaye 2010; Adán Morales 2011<sup>7</sup>; Beolens *et al.* 2011; Lawson 2012; Rose and Jude 2014, as well as many pages on the Internet. However Winkler, author of *The Botany of Texas* (1915) almost neglected Berlandier. The intent of

Osuna Sánchez was particularly to reveal the perspective of a Mexican, won over to the theses of Geiser, Ewers and Muller. The most comprehensive are Geiser, Muller and Lawson, although the latter also includes speculation<sup>8</sup>, and their bibliographies are extensive. For this period, besides the manuscripts of Berlandier himself, it remains to exploit the content of correspondence deposited in the Geneva Library: “Ms. Augustin de Candolle submitted on behalf of his family a set of 33 letters and papers related to the expedition of Berlandier to Mexico (1827-1830)” (Baehni 1957: 126). The interested reader is invited to refer to these sources; here the main events of Berlandier’s Mexican existence are simply recalled. It is the first half of his life that interests us in the present note.

### **BERLANDIER: HIS BIRTH AND YOUTH ACCORDING TO DE CANDOLLE AND HIS EXEGETES**

Amazingly Berlandier, although trained at the Natural History Museum of Geneva, and funded by four Swiss botanists<sup>9</sup>, shared nothing of his existence prior to his departure from Le Havre to Mexico.<sup>10</sup> All events of his European life seem to have been deliberately obscured: he obviously started then a new life in Mexico. His diary began on 14 October 1826, when he left the great Norman port aboard the American schooner *Hannah Elizabeth*, under Captain Charles Reling<sup>11</sup>; his only emotional words about his past were “we soon lost sight of a country which I cherished” (Berlandier 1980: 2). Two months later the ship passed through Tampico, Mexico, and Berlandier landed at Panuco on 15 December. Then began an abundant production of reports, maps, drawings and watercolors, as well as a copious harvest of specimens and samples on either side of the Rio Grande, the Rio Bravo for Mexicans. Maps of his travels in Mexico and Texas are published in Berlandier (1980: between pp. 64 and 65); Lawson (2012: xvii); Rose and Judd (2014: 5).

On the other hand, concerning the youth of Jean Louis Berlandier, there are only a few episodes recounted by secondhand, more or less fictionalized, and largely based on the writings of Augustin Pyramus de Candolle in his *Mémoires et Souvenirs*. The only objective evidence published on this dark period is actually based on a few sentences, but of major importance: “Berlandier was a young man born in France, near the *Fort-de-l’Écluse*, from a very poor family. He started as a clerk in a drugstore. He showed activity, zeal for natural history, and had got by himself a kind of classical education ... I did receive him among my students and allow to work in my collections” (de Candolle and de Candolle 1862: 336; translated from the French).

These lines have been more or less freely interpreted: some wrote that Berlandier was born at Fort de l’Écluse (which is not a town, but a former military fortress located 25 km from Geneva), maybe the son of a soldier according to Lawson<sup>12</sup>, or, more often, that he was born between Fort de l’Écluse and Geneva. However, de Candolle (1830: 60) himself had previously written “Jean Louis Berlandier, French, born in Geneva”; this indication has been neglected thereafter, only Alcocer (1899) also mentioned Ginebra (Geneva) as place of birth. Hensley (1887: 123) gave Ghent, that is to say, Gant, in Belgium, probably an orthographic mistake for Genf, Geneva. León (1895: 61-63), who named him “Luis Berlandiere”, honestly wrote “Ignoro donde nació”. As for the date, or rather his birth year, it is usually reported as 1806 or 1805, though sometimes probably before 1805 (Geiser 1937: 41), or even 1804 (Osuna Sánchez 2004: 93) – Osuna Sánchez wanted to celebrate the bicentenary of his birth! Chiszar *et al.* (2003: 138) gave 1803, but admitted “his birth date is uncertain”. Legler and Vogt (2013: 214) also gave 1803, without comment. The store “droguerie” has almost always been considered a pharmacy and Berlandier’s clerking in a drugstore recognized as being a worker in an “apothecary”, or in a pharmaceutical company,

or even being a pharmacist or pharmacologist himself. In North America, there is no strict distinction between drugstore and pharmacy, but in Europe “droguerie”, drugstore, is originally a shop where drugs are sold, that is to say “ingredients proper to dyeing and chemistry” (Litttré 1874). Today they dispense hygiene products and household maintenance items, hardware, tools, etc., but not drugs. About the true pharmacists, they had replaced the apothecaries by the late eighteenth century.<sup>13</sup> Finally, by his presence and his activity at the Museum of Geneva, Berlandier was even for some the “conservador del Museo de Ginebra” (Alcocer 1899: 122<sup>14</sup>; Serna Garza ca 2010: 10).

Now the comments of the great Genevan botanist de Candolle, or rather their various interpretations, can be either confirmed or refuted. Geiser (1937: 42) stated “Young, active, and eager, Berlandier set himself to learn Latin and Greek in his spare time by his own efforts”; Muller (1980: xvii) paraphrased this as “His great vigor, ambition, and innate ability permitted him successfully to employ his spare time in teaching himself Latin and Greek”. It is uneasy to state on what sources these claims are based, or if they are only deductions. However, it is certain that Berlandier was not entirely self-taught, since according to Stelling-Michaud (1966: 181) he sat in Geneva for academic exams of philosophy in 1824-1825, and of science in May 1825 (see below). As for his destitution, Berlandier himself confirmed in his diary (*Journey to Mexico*, Berlandier 1980: 282): “Born in misery, accustomed to all of life’s privations”. Geiser (1937: 72), “Berlandier was born in a very poor family” and Muller (1980: xvii), paraphrasing again, “Berlandier came from an extremely poor family” have certainly exaggerated this poverty: the little known information about the life of Berlandier and his parents in Geneva does not really give an impression of misery. However, obviously his livelihood had nothing comparable to those of his four sponsors.

The meeting between the teacher de Candolle and the student Berlandier can be dated from 1822 at the latest, according to the memoirs of Thomas Coulter (1793-1843), who participated that year in an excursion led by de Candolle, including a dozen botanists (Nelson 1988: 10). During a halt of the group in an alpine village Louis Berlandier played “first fiddle” – an additional but ignored talent. For now, nothing is known of Berlandier’s life details which preceded this meeting. Therefore, de Candolle and Berlandier knew each other at least one year when the latter began in 1823 his work on *Grossulariées* (Berlandier 1826: 43), and that is two years later than Berlandier passed his graduation exams. A few months before that publication, in January 1825, he had presented to the *Société de Physique et d’Histoire Naturelle de Genève* a note on the reproduction of Campanulaceae, according to Muller (1980: xvii), who had seen the manuscript; this work has never been published.

It is well known that Berlandier showed great skills in botanical illustrations. About a supposed relationship between Berlandier and the talented artist Jean Christophe Heyland (1791-1866), Lawson (2012: 25) writes that “one of his [de Candolle’s] students was Jean Louis Berlandier, who perfected his own talent for drawing and painting plants under Heyland’s mentorship”. That seems quite possible, but in the sources referred to by Lawson (Standley 1920; Blunt 1993) I did not find any mention of such tutoring.

After Berlandier’s death, Spencer Baird was perhaps the only one to support his memory: “... Berlandier, the poor unfortunate, unknown naturalist of Matamoras [sic], who spent 26 years investigating the Natural History of Mexico and Texas and died obscurely...” (Baird to Agassiz, 29 March 1856, in Herber 1963: 129). From 1862 severe moral appreciations published by de Candolle senior and junior, not commented on here<sup>15</sup>, were considered and accepted, and even amplified due to the high reputation of their authors. The most virulent

were the American botanist Asa Gray<sup>16</sup> (1810-1888) and a few others like Charles Short (1794-1868). “The involvement of Gray in Berlandier’s defamation, totally gratuitous and long after the death of Berlandier, is less readily explained” as by noted Muller (1980: xxix) more than one century later. On the other hand, Rose and Jude (2014) recently suggested: “This praise of Berlandier [by Agassiz] was as much a taunt at Gray as anything else because both men had agreed to disagree ...”. Samuel Geiser (1933; 1937) was the first to rebut the attacks in a chapter appropriately titled *In defense of Jean Louis Berlandier*. According to Cavillier (in Briquet and Cavillier 1940: 38), John Briquet, a Swiss botanist, provided Geiser in 1930 with much information that allowed him to support his thesis. Two major ideas have been developed: importance of work, difficulties in a hostile environment – notions which at first glance may seem incompatible. Since this advocacy Berlandier was justly exonerated by all those who have studied his life and Texan and Mexican activities. All except one. Precisely, after the publishing of *Journey to Mexico* (Berlandier 1980), translation of the manuscript of *Voyage au Mexique*, several critics favorably greeted this publication (Anonymous 1980; McVaugh 1982; Weber 1982; Campbell 1983). In contrast, the botanist Hervé Burdet (1982), fellow countryman of de Candolle and Briquet, having presented in a few lines the work itself “dont la présentation est élégante” (whose presentation is elegant), covers two pages to harshly criticize both Muller, author of the introduction “qui n’est qu’un long plaidoyer en faveur de Berlandier ... à la fois tendancieux et mal documenté” (which is a long advocacy for Berlandier ... both biased and poorly researched) and Berlandier himself, “jeune homme ambitieux et sans moyens d’existence en rapport avec ses ambitions. Il ne peut pratiquer l’étude des sciences naturelles pour lesquelles il a du goût, n’ayant pas de fortune. Il n’a pas non plus les ressources voulues pour faire des études de médecine” (ambitious young man without livelihoods in relation to his ambitions. He

cannot perform the study of natural sciences for which he has taste, with no fortune. He does not have too the resources necessary to study medicine), while praising de Candolle for his commitment in Berlandier’s favor.

## BERLANDIER: HIS BIRTH AND HIS YOUTH ACCORDING TO THE ARCHIVES

After a review of published scanty information about Berlandier’s youth, various archives were tentatively exploited. That started by looking for a trace of the birth of Berlandier in the registers of civil status of the département of Ain<sup>17</sup>: the Fort de l’Écluse is about the limit of the town of Collonges and Léaz, set in the latter. Nothing being found there, investigation was extended to about sixty towns around in this département. Curiously, a small group of Berlandiers existed in Bugey, around Ambutrix, attested as early as 1650, which disappeared in the nineteenth century, according to these registers. Here we are already far from Fort de l’Écluse, 80 km by road. Anyway, not a single Jean Louis Berlandier is mentioned. During these unsuccessful searches, it appeared that the name Berlandier was and still is almost exclusively limited to the Bouches-du-Rhône and Gard départements, within a radius of ten kilometers around Boulbon<sup>18</sup>, 350 km from Geneva. It is obviously an uncommon surname: according to the *Institut National de la Statistique et des Études Économiques* (INSEE), from 1890 to 1990 only 145 Berlandiers were born in France.

With the hope to find some track of Jean Louis Berlandier’s boarding, the shipping registers of Le Havre were investigated. Archives of the Seine-Maritime do not keep record of vessels leaving the port of Le Havre before 1830; however the group of genealogists of this département (GGHSM) could answer that Berlandier Jean Louis, aged 22, born in Geneva, had boarded 14 October 1826, bound for Tampico.<sup>19</sup> Their file does not contain any more information, but it quite confirms what

Berlandier himself wrote at the beginning of his journal about his departure (Berlandier 1980: 1). Then remained, however, the problem of his birth in Geneva, which was at odds with the text of de Candolle “born in France, near Fort-de-l’Écluse”. Remember that Geneva, hitherto independent, had been incorporated into France from 1798 to 1815 before becoming a Swiss canton and capital of this canton. Then data on the birth of Jean Louis Berlandier were sought in the Archives of the Canton and the State of Geneva, civil status<sup>20</sup>, research that has shown positive (Figure 1): Jean Louis Marie Berlandier was born in Geneva on 13 Thermidor Year XI, that is to say on 1 August 1803, at noon (register E.C. Genève naissances 6). So he was 23 years of age at the time of boarding in Le Havre, and 48 years old when he died in 1851. His father, a grocer, was named Jean Berlandier, and his mother Marie Anne Guiardel<sup>21</sup>; there are no more data on the birth certificate, except for the identity of witnesses, Barthélémy Monet and Étienne Confavreux, both wine merchants in Geneva: at least Berlandier’s birth was probably well celebrated. In these civil status records, – births, marriages and deaths –, a possible existence of brothers and sisters and the origin and fate of parents were searched, but in vain. In her short note on Berlandier as a student, Stelling-Michaud (1966: 181) stated that he came from France, also specifying “\*ca 1805 near Fort-de-l’Écluse (Ain)”, and added that according to police records of foreigners “Mr. Berlandier father can not provide regular papers, having been married only religiously.” This exceptional absence of civil marriage did not facilitate research on Berlandier’s parents.

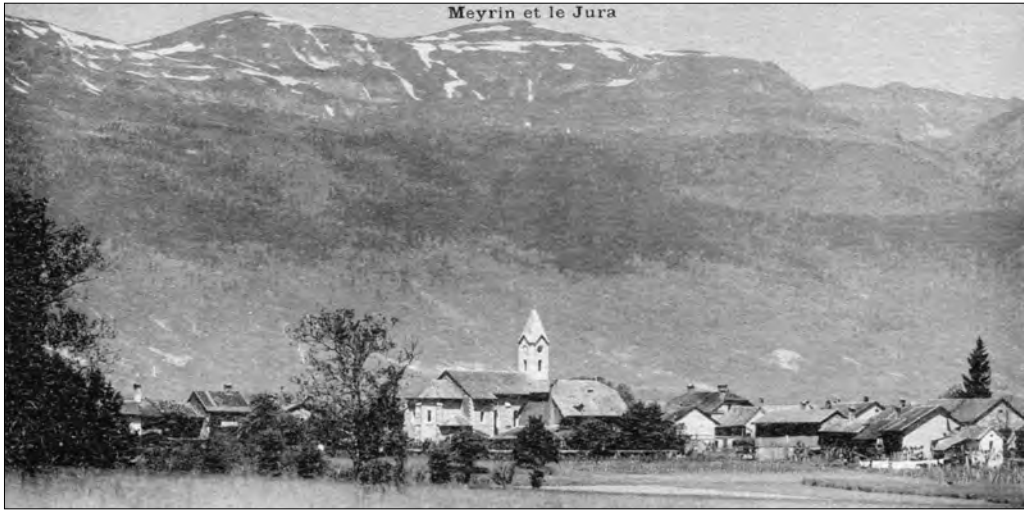
Jean Louis Berlandier was baptized according to the Catholic rite<sup>22</sup> (register E.C. rép. 1.88). The ceremony was celebrated in the church of Meyrin, near Geneva (Figure 2) by the priest Prosper Guillot (1759-1835), a refractory priest during the revolutionary period: “Le refus de serment l’expulsa de sa cure en 1791; il se retira dans le Valais; mais après le règne de la terreur, son zèle et la pensée que les fidèles



**FIGURE 1.** Birth registration of Jean Louis Marie Berlandier, 13 Thermidor Year XI (1 August 1803). On the seal it is written REP[UBLIQUE] FRA[NÇAISE] LAC LEMAN. “Lac Léman” (Lake Geneva) was at that time a French département. State Archives of Geneva, civil status, births register EC Genève 6, p. 205. Acte de naissance de Jean Louis Marie Berlandier, 13 thermidor an XI (1<sup>er</sup> août 1803). Le cachet indique REP[UBLIQUE] FRA[NÇAISE] LAC LEMAN. Le «Lac Léman» était alors un département français. Archives d’État de Genève, état-civil, registre E.C. Genève naissances 6, p. 205.

en France étaient privés de secours spirituels, le ramenèrent dans sa patrie. Il exerça son ministère dans le pays de Gex, au milieu de tous les périls qui menaçaient alors les prêtres. Souvent caché, il ne sortait que la nuit pour visiter les chrétiens d’alentour. En 1803 il fut nommé curé de Collonges...” (The refusal of the oath expelled from his parish in 1791; he retreated in Valais, but after the reign of terror, his zeal and thought that worshipping in France was deprived of spiritual help brought him back to his homeland. He ministered in the Pays de Gex, amid all the dangers which then threatened the priests. Often hidden, he only went out at night to visit the Christians around. In 1803 he was appointed pastor of Collonges ...) (Anonymous 1835; Verchère 1894). The vicar of Geneva, Augustin Lacoste (1762-1848), had copied the original baptismal certificate, dated 11 September 1803, on the register of Catholic Parishes (Figure 3). The godfather was Jean Louis Chabran, godmother his wife, Thérèse





**FIGURE 2.** Meyrin, with Jura Mountains in the background. Jean Louis Berlandier was baptized in this church, on 11 September 1803, by the priest Prosper Guillot. Formerly in the Pays de Gex, first included on 4 March 1790 in the department of Ain then in the department of Léman on 17 August 1798, the village became part of Switzerland on 4 July 1816 and of the Canton of Geneva on the next 10 October. This view was taken about one century later, but under this angle changes are probably not noticeable.

Meyrin, avec le Jura en arrière-plan. Jean Louis Berlandier a été baptisé dans cette église, le 11 septembre 1803, par le prêtre Prosper Guillot. Anciennement dans le pays de Gex, d'abord inclus le 4 mars 1790 dans le département de l'Ain puis dans celui du Léman le 17 août 1798, le village ne fut rattaché à la Suisse que le 4 juillet 1816 et le 10 octobre de la même année au canton de Genève. Cette vue est postérieure d'environ un siècle, mais sous cet angle les changements sont probablement peu perceptibles.

Bauchier. It is obviously this godfather who gave his surname to Berlandier junior.<sup>23</sup>

This clarification being completed, it appeared that one researcher had previously partly gotten these results. In his critical and bitter review of *Journey to Mexico*, Burdet (1982), correcting Muller (1980), gave the exact date and place of Berlandier's birth, only mistaking day in conversion to the Gregorian calendar, and specifying – important precision – il “est né au domicile de son père, la maison n° 179 du quartier de la Madeleine” (he was born in his father's home, the house No. 179 in Madeleine district). He added “Muller le sait !” (Muller knows that!).<sup>24</sup> With this address, a new hypothesis about the identity of *Fort-de-l'Écluse* mentioned by de Candolle can be put forward. On the old map of Geneva called “Billon 1726-1728<sup>25</sup>” the numbering of houses was added; the house No. 179 is actually close to the temple of the “Magdelaine”, along Rue

des Orfèvres. To reach the street and then the great place of Magdelaine, one had to cross the passage labeled *Le fort de l'Écluse* on the map, close to Berlandiers' home (Figure 4). House No. 179 matches the current 4 Rue de la Croix d'Or. This passage was apparently narrow and winding, hence its name, comparing it with the Rhône's narrow pass or defile at the Fort de l'Écluse.<sup>26</sup>

Several other documents in the Geneva State Archives (AEG) reveal some details about the young naturalist. Jean Louis Berlandier, registered at the Academy in 1824 (AEG Academy Ba 1 p.131), “sat for his examination of 2nd year of philosophy on 13 and 27 May 1825 and was admitted<sup>27</sup>” (AEG Academy Ba3 No. 68) (Figure 5). In 1826 two passports were delivered to him (AEG Chancellery Ab 18 No. 829 and Ab 19 No. 631). The first, dated 27 March, was to go to Marseille as “Student of Natural History employed by the Museum of

this city” (Figure 6); it was, of course, to fetch an ostrich offered at the Museum, according to the anecdote reported by de Candolle.<sup>28</sup> The second, on 19 September, was to go to “the States of the Republic of Mexico” (Figure 7). On these passports it is indicated that Berlandier, aged 22, was 4 feet 10 inches or 5 feet, according to the document. Using the Swiss foot of 30 cm gives a size of 145 cm or 150 cm, and using the French foot of 32.4 cm yields a size of 157 or 162 cm, which is more likely; however, one can recognize that Berlandier was short in stature. Hair, eyebrows and eyes were black, nose regular, forehead and mouth “average”, chin round, face oval, complexion colored.

## PARENTS OF JEAN LOUIS BERLANDIER

Finally, starting from documents of the Vaud Cantonal Archives (ACV)<sup>29</sup> and State of Geneva Archives (AEG), it was possible to discover some stages of the lives of the parents of Jean Louis Berlandier and clarify their identity. In 1807 and in 1811 they acquired a house in Farges and a set of land, vineyards, and woods located around on Farges and Collonges<sup>30</sup> from Joseph Peney aka Baully.<sup>31</sup> Both villages are situated at the foot of the Jura Mountains, and they were then largely rural, but farmers could rub shoulders with watchmakers. Like all municipalities of Pays de Gex, they were in 1798 (17 August) included in the new département of Léman and like most reinstated in the Ain after the joining of the Canton of Geneva to the Swiss Confederation (19 May 1815). According to the contract the former owner kept the usufruct. The parents Berlandier, yet merchant grocers, still lived in Geneva, but gave their address as 10 Rue Cornavin.

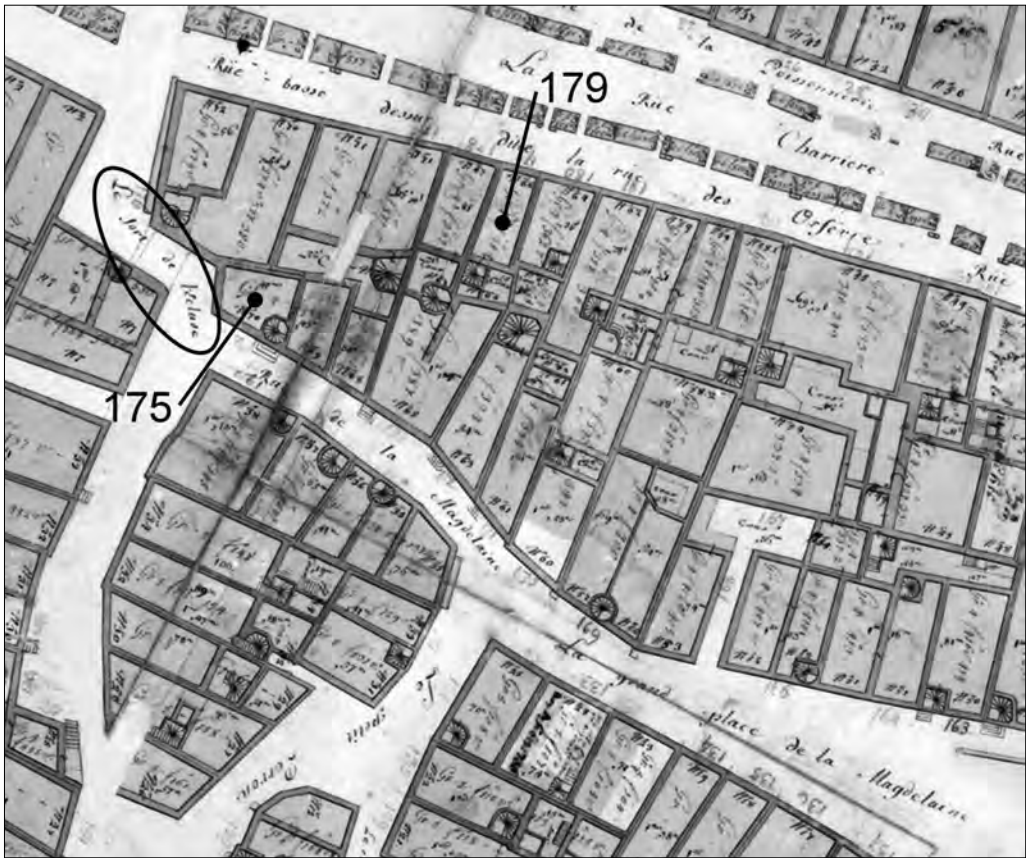
It was on 21 September 1824 that Jean Berlandier had to admit that he was married religiously only; an exemption was granted on 28 September for the registration of his son at the Academy, although Jean Louis



**FIGURE 3.** Registration of the christening of Jean Louis Marie Berlandier on the register of Catholic Parishes, State Archives of Geneva, civil status, register No. 1, page 57. Baptism was celebrated in the church of “Mereins”, Meyrin, now located between Geneva and the border with France. Bourbon is for Boulbon. The names of the godparents are also wrongly spelled: they were Jean Louis Chabran and Thérèse Bauchier. The priest was Prosper Guillot, refractory priest during the revolutionary period. The original act, dated 11 September 1803, was copied by the priest of Geneva, Augustin Lacoste. According to the recording dates of previous and following acts on this page, this copy was made between 23 and 27 October 1803. In this register, dates according to the Republican calendar are rarely indicated, in addition to the Gregorian calendar dates.

Enregistrement du baptême de Jean Louis Marie Berlandier sur le registre des Paroisses catholiques, Archives d'État de Genève, état-civil, registre n°1, page 57. Le baptême a été célébré en l'église de “Mereins”, Meyrin, située aujourd'hui entre Genève et la frontière avec la France. Bourbon est pour Boulbon. Les noms des parrain et marraine sont aussi erronés: c'étaient Jean Louis Chabran et Thérèse Bauchier. Le prêtre était Prosper Guillot, prêtre réfractaire durant la période révolutionnaire. L'acte original, daté du 11 septembre 1803, a été recopié par le curé de Genève, Augustin Lacoste. D'après les dates d'enregistrement des actes précédent et suivant de cette page, cette copie a été effectuée entre le 23 et le 27 octobre 1803. Dans le registre les dates du calendrier républicain ne sont qu'exceptionnellement indiquées, en complément du calendrier grégorien.

was yet major (AEG Étrangers C6 p. 358 and 366). According to the census of 1828 (AEG Recensement G2 fol. 124 ), the parents still lived in Geneva and again in the Magdelaine district, but at No. 175 – if Burdet (1982) did not make a mistake<sup>32</sup>; the 175 was at one end of the passage named *Le fort de l'Écluse*,



**FIGURE 4.** Geneva, district of “la Magdelaine”. Houses Nos 175 and 179, near the passage named *Le fort de l’Écluse* (circled), inhabited by the Berlandier family. Jean Louis Berlandier was born in the house No 179. The block including these houses is now occupied by a department store. Système d’Information du Territoire Genevois (SITG), Plan Billon (1726-1728).

Genève, quartier de la Madeleine. Maisons n° 175 et 179, proches du passage nommé *Le fort de l’Écluse* (entouré), habitées par la famille Berlandier. Jean Louis Berlandier est né dans la maison n° 179. L’ensemble comprenant ces habitations est aujourd’hui occupé par un grand magasin. Système d’information du territoire genevois (SITG), Plan Billon (1726-1728).

matching the current 3 Rue de la Madeleine. Marie Ghiardet [sic] was born in Farges, Jean Berlandier in “Bourbon”; he was at the time a cigar manufacturer, working at home.<sup>33</sup> These parents declared themselves Catholic, both of 55 years, while she was 64 and he 58. The departure of Jean Louis to Mexico is mentioned in the register, with the names of his four sponsors.

The parents finally came to settle in Farges, the father as a farmer according to his death certificate. The archives of the Chancellery

(AEG) have not kept receipts of any passports to their names. Upon the death of Joseph Peney in 1816, the Berlandiers could settle into their house, acquired 10 years earlier. Presumably they remained in Geneva for at least two reasons: their son was studying there and the work of Jean Berlandier, either grocer or cigar maker, required his presence in the city. But he took advantage of his retirement only for a short time: Jean Burlandier [sic]<sup>34</sup> died at Farges on 31 January 1830; he was then 60 years old, his wife Marie Guierdel [sic] was still alive. In a census in 1836 she



N°	DÉSIGNATION DE L'ÉTUDIANT	FACULTÉ DES LETTRES			FACULTÉ DES		
		1. 1 <sup>re</sup> Année (Entrée)	2. 2 <sup>e</sup> Année (Entrée)	3. 3 <sup>e</sup> Année (Entrée)	1. 1 <sup>re</sup> Année (Entrée)	2. 2 <sup>e</sup> Année (Entrée)	3. 3 <sup>e</sup> Année (Entrée)
68.	De Candolle Alphonse à Genève						
69.	De Candolle Alphonse à Genève						
68.	Berlandier Jean Louis à Genève						
69.	Berlandier Jean Louis à Genève						

**FIGURE 5.** Recording of Jean Louis Berlandier’s admission at the Geneva Academy (University). The annotation indicates: “Sat for his examination of 2<sup>nd</sup> year of philosophy on 13 and 27 May 1825 ... admitted”. Note that Alphonse de Candolle, although three years younger (he was then 18 and a half), was registered in the same section, like Gustave Fatio, father of the Swiss naturalist Victor Fatio (1838-1906), author of the *Faune des Vertébrés de la Suisse*. State Archives of Geneva, Academy, Ba 3, No. 68.

Enregistrement de l’admission de Jean Louis Berlandier à l’Académie (Université) de Genève. L’annotation indique «a fait son Examen de 2<sup>de</sup> Année de Philosophie le 13 et 27 Mai 1825 ... admis». Noter qu’Alphonse De Candolle, bien que plus jeune de trois ans (il avait alors 18 ans et demi), est inscrit dans la même section, de même que Gustave Fatio, père de Victor Fatio (1838-1906), auteur de la *Faune des Vertébrés de la Suisse*. Archives d’État de Genève, Académie, Ba 3, n°68.

was identified as Marie Guierdel, Widow Berlandier, aged 70 (she was 72). She died at Farges on 23 March 1844; the death certificate names her Marion [sic] Guierdel and gives her 80 years, which was her exact age. She was indeed born in Farges on 2 April 1764; the birth register called her Mari-anne [sic, twice] Guiardel (Figure 8). Her parents, Bernard Guiardel, of Farges, master watchmaker, and Jeanne Marie Curt from Clefs in Savoy (presently Haute-Savoie), were married in Farges on 9 February 1750; the Guiardels were located in this town for decades. The review of civil status registers confirmed that indeed there was no civil marriage of Jean Berlandier and Marie Guiardel in Farges; however, it was likely at Farges that they were religiously<sup>35</sup>



**FIGURE 6.** Receipt of passport given to Jean Louis Berlandier for his trip to Marseille. Profession is “Student of Natural History employee by the City Museum”; it is added “P Marseille”. Berlandier did not sign. State Archives of Geneva, Chancellery, Ab 18, No. 829.

Récépissé du passeport remis à Jean Louis Berlandier pour son voyage à Marseille. La profession est “Étudiant d’Histoire naturelle Employé au Musée de cette Ville”; il est ajouté “P Marseille”. Berlandier n’a pas signé. Archives d’État de Genève, Chancellerie, Ab 18, n°829.



**FIGURE 7.** Receipt of passport given to Jean Louis Berlandier for his trip to Mexico. Undated, but delivered in September 1826. Profession is “Former Curator of the Academic and Naturalistic Museum”; it is added “P States of the Republic of Mexico.” Notice the youthful writing signature, clear as writing of Berlandier’s numerous manuscripts. State Archives of Geneva, Chancellery, Ab 19, No. 631.

Récépissé du passeport remis à Jean Louis Berlandier pour son voyage au Mexique. Non daté, mais délivré en septembre 1826. La profession est “Ancien Conservateur du Musée Académique et Naturaliste”; il est ajouté “P les États de la République du Mexique”. Noter l’écriture juvénile de la signature, écriture limpide que l’on retrouve dans ses nombreux manuscrits. Archives d’État de Genève, Chancellerie, Ab 19, n°631.



**FIGURE 8.** Registration of the christening (with birth date: 2 April 1764) of Marie Anne Guiardel, as Mari-anne, mother of Jean Louis Berlandier. Godfathers: Bernardin Monestier and Mari-anne Monestier. Register of the church of Farges, presently in Archives of civil status, département of Ain, set 38184, page 67. Her death registration, 23 March 1844, city hall register, presently in Archives of civil status, département of Ain, set 38269, No.5. The first name is modified as Marion, the surname as Guierdel (like all former Guiardel). She was “ménagère” (housewife). One of the witnesses was her nephew François Guiardel, son of her brother, also named François Guiardel. As with Jean Berlandier, the second witness was a Jaquinod (Jacquinod), common name in Farges; the nephew’s mother was born Claudine Jacquinod.

Enregistrement du baptême (avec date de naissance: second avril 1764) de Marie Anne (ou Mari-anne) Guiardel, mère de Jean Louis. Parrain et marraine: Bernardin Monestier and Mari-anne Monestier. Registre paroissial de Farges, conservé aux Archives de l’État-civil du département de l’Ain (lot 38164, p. 67). Enregistrement de son décès, le 23 mars 1844, mairie de Farges, registre conservé aux Archives de l’État-civil du département de l’Ain (lot 38269, n°5). Le prénom est modifié en Marion, le nom en Guierdel (de même pour les autres Guiardel). Elle est déclarée comme étant ménagère. L’un des témoins était son neveu François Guiardel, fils de son frère, également nommé François Guiardel. Comme pour Jean Berlandier, le second témoin était un Jaquinod (Jacquinod), nom commun à Farges; la mère du neveu François était née Claudine Jacquinod.

married and lived for some time before leaving for Geneva: the custom, well- respected at the time, was to celebrate the wedding in the city of the wife. Furthermore, these acts confirm that Jean Berlandier was a native of “Bourbon” [sic], that is to say Boulbon in Bouches-du-Rhône, the “cradle” of the Berlandiers, where the name is recorded from as early as the mid-sixteenth century (see below).

Based on the records of civil status one can be certain that only two Jean Berlandiers born at Boulbon matched age and “profile” of the father of Jean Louis: nothing else was known of their existence, except that they did not die in infancy, they probably both reached adulthood, and they left their region of origin. One, son of Pierre Berlandier (1733-1810), a farmer, and Amy Marie (1727-1786), was born on 5 March 1769; the other one, son of Étienne Berlandier (1720-1790), also a farmer, and Marguerite Bondon (1729-1793), was born on 1 January 1770. The first was still living in Boulbon on 5 October 1790, because his older brother Anthony and he were witnesses to the marriage of their sister Thérèse, and both signed the register; Anthony was then 31 years, Jean 21. The signature of this Jean, rather crude (Figure 9: 1), is very different from the known ones of the other Jean Berlandier, who settled in Geneva, father of Jean Louis Berlandier: therefore the latter was the grandson of the second couple, of Étienne Berlandier and Marguerite Bondon (Figure 10). The exiled Jean Berlandier had nine brothers and sisters, five of whom died in infancy. His grandfather’s name was also Jean Berlandier, and the lineage of known ascendants goes back to Guillaume Berlandier, born about 1535, who was a master blacksmith farrier (Table 1). Étienne Berlandier died on 12 October 1790 and his wife Marguerite on 7 October 1793; it is very likely that at that time their son Jean had decided to try his own luck, and was then already far from his native Provence. His own son, Jean Louis, did nothing but develop this yearning of escape and discovery.



**TABLE 1.** Patriarchal lineage (agnatic lineage) of Jean Louis Berlandier’s ancestors, partly based on genealogical research by Daniel Ranchin (see Note 18).

Husband, dates	Occupation	Marriage	Wife, dates
Guilhaume Berlandier (1535-?)	Master blacksmith farrier	? 1570	Alione Granier (1540-?)
Marcellin Berlandier (1580-?)	Jurisdictional prosecutor, County of Boulbon	Boulbon, 1601	Magdalene Cristolin (ca. 1581-?)
Thomas Berlandier (ca. 1609-1669)	Miller	Boulbon, 1632	Marie Chapelier (ca. 1608-?)
Jean Berlandier (1642-1688)	Miller	Boulbon, 1671	Marie Gilles (1647-1703)
Jean Berlandier (1686-1729)	Miller	Boulbon, 1710	Claude Jullian (1692-1770)
Étienne Berlandier (1720-1790)	Farmer	Boulbon, 1753	Marguerite Bondon (1729-1793)
Jean Berlandier (1770-1830)	Grocer, cigars manufacturer	Farges?, between 1793 and March 1802	Marie Anne Guiardel (1764-1844)
Jean Louis Berlandier (1803-1851)	Naturalist	Matamoros, ?	Beatriz Maria Concepción Villaseñor (?-after 1853)

## BERLANDIER: GENEVAN, FRENCH, MEXICAN

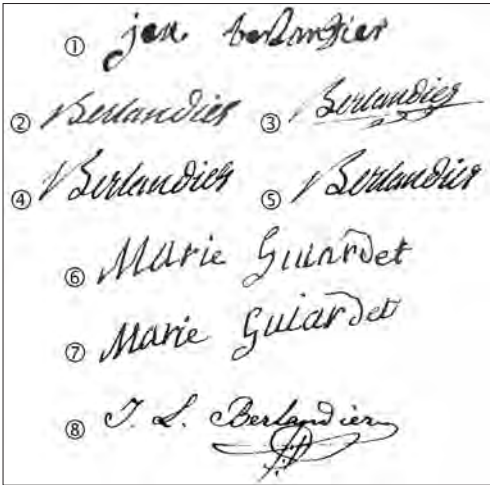
Farges is a neighboring town of Collonges, therefore not far (6 km) from the Fort de l’Écluse, although not being along the Rhône River. One might think that it is there, rather than the place called *Le fort de l’Écluse* in Geneva, close to the birthplace of Berlandier, that must be the origin of the ambiguous indication given by de Candolle. Thanks to the documents mentioned above, it seems that Jean Louis Berlandier probably never lived in Farges, his parents having left Geneva after his departure without return to Mexico in 1826. The hypothesis here presented, based on his birthplace close to *Le fort de l’Écluse* in Geneva, appears to be the most probable. What is certain is that de Candolle, when writing his memoirs, had inadvertently created a confusion that caused 150 years of ambiguities and speculations.

One last question can be asked: was Jean Louis Berlandier French? His parents were of French origin, he was born in Geneva, then a French city, and he was registered at the Academy as coming from France. Therefore, one must recognize him as of French nationality, as did the vast majority of

his biographers<sup>36</sup>, and among them the Swiss themselves, from de Candolle to Burdet. Anyway, France ignored Berlandier, who was voluntarily Mexican during the second half of his life. According to Sánchez Osuna (2004: 28) “Berlandier se consideraba a sí mismo como un ciudadano mexicano. (...) El sujeto de su notable producción informativa y científica, fue México, y el objeto de la misma fue contribuir a la cultura de México. Berlandier fue, por tanto, un buen ciudadano mexicano” (Berlandier considered himself as a Mexican citizen... Mexico was the subject of his outstanding informative and scientific production, whose object was to contribute to the culture of Mexico. Thus Berlandier has been a good Mexican citizen). Osuna’s daughter (Sánchez, in Sánchez Osuna 2004: 9) added “... Berlandier fue, incuestionablemente, tamaulipeco. Así el lo sentía, así lo proclamaba...” (Berlandier was, undoubtedly, a Tamaulipec. Thus he felt, so he proclaimed).

## CONCLUSION

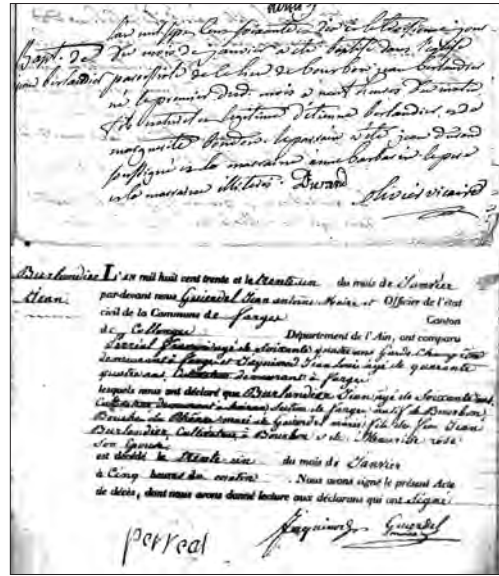
These few details, some unpublished, allow knowing a little more about the environment of the young Jean Louis Berlandier: as the only son, he was born and raised in Geneva, a city



**FIGURE 9.** Signatures. 1. Jean Berlandier, namesake of the father of Jean Louis (Boulbon, October 1790). 2. Jean Berlandier, father of Jean Louis (Geneva, August 1803); 3. idem (Geneva, June 1816); 4. idem (Geneva, July 1816); 5. idem (Geneva, July 1816). 6. Marie Guiardet, mother of Jean Louis (Geneva, June 1816); 7. idem (Geneva, July 1816). 8. Jean Louis Berlandier (Geneva, September 1826). 1: Département des Bouches-du-Rhône Archives, civil status; 2: State Archives of Geneva, civil status; 3-7: Canton of Vaud Archives [item P Muret (Frères) 14]; 8: State Archives of Geneva, Chancellery.

Signatures. 1. Jean Berlandier, homonyme du père de Jean Louis (Boulbon, octobre 1790). 2. Jean Berlandier, père de Jean Louis (Genève, août 1803); 3. idem (Genève, juin 1816); 4. idem (Genève, juillet 1816); 5. idem (Genève, juillet 1816). 6. Marie Guiardet, mère de Jean Louis (Genève, juin 1816); 7. idem (Genève, juillet 1816); 8. Jean Louis Berlandier (Genève, septembre 1826). 1: Archives départementales des Bouches-du-Rhône, état-civil; 2: Archives d'État de Genève, état-civil; 3-7: Archives Cantonales Vaudoises [cote P Muret (Frères) 14]; 8: Archives d'État de Genève, Chancellerie.

that was already important and prosperous. He was twelve years old when his natal town became Swiss, but he kept his French nationality. His parents, storekeepers, had the financial means to acquire some property, but without having significant revenue. He worked while pursuing his studies, but had sufficient leisure time (and talent) to learn the violin. For this early period, it might be possible to find some other documents, such



**FIGURE 10.** Registration of the christening (with birth date: 1 January 1770, “à neuf heures du matin”) of Jean Berlandier, father of Jean Louis Berlandier. Godfathers: Jean Durand and Anne Barbarin. The vicar added “The father and godmother illiterate”. Register of the church of Boulbon, presently in Archives of civil status, département of Bouches-du-Rhône, set “1770 baptêmes”, page 1. His death registration, 31 January 1830, city hall register, presently in Archives of civil status, département of Ain, set 38230, No. 4. He was recognized as “cultivateur” (grower). There are several mistakes on the act: Burlandier for Berlandier, Bourbon for Boulbon, “Maurise rose” for Marguerite Bondon, her mother. One of the witnesses was the “garde-champêtre” (village police officer).

Enregistrement du baptême (avec date de naissance: premier janvier 1770, «à neuf heures du matin») de Jean Berlandier, père de Jean Louis. Parrain et marraine: Jean Durand and Anne Barbarin. Le vicaire a ajouté: «Le père et la marraine illettrés (ancienne forme pour illettrés)». Registre paroissial de Boulbon, conservé aux Archives de l'État-civil du département des Bouches-du-Rhône (Boulbon, 1770, baptêmes, p. 1). Enregistrement de son décès, le 31 janvier 1830, mairie de Farges, registre conservé aux Archives de l'État-civil du département de l'Ain (lot 38230, n°4). Il est reconnu comme étant cultivateur. L'acte contient plusieurs erreurs: Burlandier pour Berlandier, Bourbon pour Boulbon, et «Maurise rose», nom de la mère, pour Marguerite Bondon. L'un des témoins était le garde-champêtre.



**FIGURE 11.** Between Geneva and Fort de l'Écluse, extract from "Cassini's map", sheet 148 (1761). Localities mentioned in the text are circled: Geneva, Meyrin, Farges, Heirens = Airans, Asserens = Asserans, Collonge = Collonges, Fort de l'Écluse, Léaz.

De Genève au Fort de l'Écluse, extrait de la carte dite «de Cassini», feuille 148 (1761). Les localités citées dans le texte sont entourées: Genève, Meyrin, Farges, Heirens = Airans, Asserens = Asserans, Collonge = Collonges, Fort de l'Écluse, Léaz.

as those concerning his baptism, the housing and occupations of his parents in Geneva, his early education, and his activity as "clerk in a drugstore", but it must be kept in mind that he obviously wanted to hide this period. Berlandier attended the botanist de Candolle for at least four years<sup>37</sup>, and it's amazing that all this time the professor and his son seemed to be satisfied, not to say enthusiastic. Nothing in connection with what both would criticize later was apparently detected, in a way that would ruin his reputation for decades. This is one of the mysteries that remain when considering the existence of Jean Louis Berlandier.

## ACKNOWLEDGMENTS

Thanks to the institutions that opened their archives on the Internet, or which agreed to

answer my requests, I was able to achieve the presented results. In France the Archives of the département of Ain, civil status, of which I especially thank Ms. Brigitte Ladde, Archivist. I also consulted the Archives of the Bouches-du-Rhône; in the United States, those of Family Search also called "of the Mormons" (Church of Jesus Christ of Latter-day Saints); in Switzerland, the Archives of the Canton of Vaud and of the State and the Canton of Geneva. From the latter special thanks to Mr. Jacques Barrelet, State Archivist in Geneva, who has provided me with copies of all available documents about Jean Louis Berlandier. Genealogy sites Geneanet.org, Genealogie.com and Geneprovence.com were regularly visited. I also thank Mrs. Lou Ellen Callarman (VC/UHV Library, Victoria, Texas) for the provision of Baker's paper; Mr. Michel Huault (GGHSM, Groupement généalogique et

héraldique de la Seine-Maritime) for his answer about the boarding of Berlandier at Le Havre; Mr. Daniel Ranchin who kindly answered to my question about Jean Berlandier of Boulbon; and Ms. Victoire Koyamba, librarian at the Muséum national d'Histoire naturelle, Paris, for her efficiency and kindness. Aaron Bauer was immediately enthusiast to publish this note in *Bibliotheca herpetologica*; the editorial work was carefully carried out by Markus Lambertz and Ralph Tramontano, with the contribution of two anonymous reviewers: many thanks to the team. Finally, I thank two colleagues and friends. Kraig Adler could provide me, with the help of Dawn Potter, a copy of *Explicando a Berlandier* by Sánchez Osuna; always available and challenging, a master of biographies, he followed and encouraged this study at throughout its development. John Iverson, certainly the best among the present “chelonographers”, painstakingly read the manuscript, and by dozens of corrections smoothed my English, changing a rough draft into an understandable paper.

## NOTES

1. For Muller the two previous studies were probably Geiser 1937 and Briquet and Cavillier 1940.
2. “It is very possible that in appropriate files one can find the christening registration of Berlandier, with the names of his parents and that of the hamlet where he was born, in order to complete the Berlandieran biography.”
3. A list of taxa dedicated to Jean Louis Berlandier is proposed in the Appendix 1.
4. The goal and main members of this commission were introduced by Sánchez in 1828: “Reasons of state prompted the Supreme Government of Mexico to appoint a commission to arrange the boundary between this republic and the United States of the North. For this purpose General Manuel de Mier y Terán was appointed head of the said commission because few men, in fact, possess the vast knowledge necessary for the scientific investigation of the eastern interior states which is involved in such an enterprise. In so arduous an undertaking the need of men to cooperate with him was evident and for this purpose the government appointed Lieutenant Colonel José Batres of the medical staff; Lieutenant Colonel Constantino Tarnava, of the Engineers; Rafael Chovell, mineralogist; Luis Berlandier, botanist and zoologist; and myself, draftsman” (Sánchez 1926).
5. Dall (1915: 295, 322), quoting Lt. Couch, “discoverer” in 1853 of Berlandier’s collections in Matamoros, reports that “The collection is a labor of 24 years and ranges from the Sabine to California. There are about 150 bottles of diff. sizes, diff. species of vertebrata, mostly snakes, lizards, etc.;—a few birds; several cubic feet of minerals; a box of plants; some twelve square feet of insects nicely preserved in glass cases; paintings of all the different Indian tribes in Old Mexico; sketches of Mex. scenery, meteorological reports, observations, with piles of manuscripts relating to his labors (...) Berlandière [sic] made many excursions into the country for the purpose of collecting in Botany, Nat. History, Mineralogy, &c., &c. Also, to make Astronomical and Meteorological observations; the latter made at Matamoros [sic] very complete and extensive – his Mss. show that he was also a thorough Geographer and Statistician.”
6. Still according to Lt. Couch (Dall 1915: 322; Muller 1980: xxxiv), “He [Berlandier] followed a very general custom in that country, living with a woman as a Mistress, but married her short time before his death. The result of this connection was several children – one of them being a Captain of Mexican Infantry.” According to Osuna Sánchez (2004: 95), his marriage was celebrated in 1835. However the index of marriages celebrated in Matamoros (Parish of Nuestra Señora del Refugio, 1801-1864, at <https://familysearch.org/pal:/MM9.3.1/TH-1-11056-32535-87?cc=1790934&wc=M99K-9W7:1827685791>) does not include a possible union of Jean Louis Berlandier with Concepción Villaseñor. Besides, the register of baptisms at <https://familysearch.org/pal:/MM9.3.1/TH-1-11056-32535-87?cc=1790934&wc=M99K-9W7:182768579> certifies that their daughter María Luisa was christened on 3 October 1831 and that she was born 22 days earlier, i.e., on 10 September. On 23 December 1852 in Matamoros she married Eligio Pérez – probably the son-in-law mentioned by Couch (in Dall 1915: 295). Osuna Sánchez tells us (2004: 26) that toward the end of 1846 Berlandier had incidentally mentioned a 10 year old son and this author later adds (Osuna Sánchez 2004: 95), erroneously, that this is his first child (“Nace su primogénito”). A census dated August 1850 made in Maryland, county of Frederick, includes Rafael Berlandier, 17, student, born in Mexico



- (<https://familysearch.org/pal:/MM9.3.1/TH-266-13036-117959-71>), who is most probably another child of Jean Louis Berlandier. Kaye (2010: 100) assessed that the couple had seven children, but he also admitted, in a subtitle, that his book was a novel.
7. This little study includes several color plates but its interest, considerable, would have been in the reproduction of a portrait presented as that of Jean Louis Berlandier, hitherto unknown. There is no indication of its origin. Actually it is, unfortunately, a copy of a portrait of Colonel José Francisco Ruiz, already published: see e.g. Ewers (1969: 5, figure 5). “Neither Kew, Geneva, nor Stockholm (although the Iconothèque at the Botanical Garden in Stockholm is one of the finest in the world), nor the Gray Herbarium at Cambridge, possesses a portrait of Berlandier” (Geiser 1937: 71-72).
  8. At least four reviews of Lawson’s book were published: Doolittle (2013), Britten (2013), Morris (2013), and Gabriel Martínez-Serna (2014). Doolittle used predominantly the name of “Bandelier” for Berlandier.
  9. They were Auguste Pyramus de Candolle (1778-1841), Philippe Dunant [de Salatin] (1797-1866), [Marie] Philippe Mercier (1781-1831) and [Moïse Étienne] Stefano Moricand (1779-1854) – also malacologist –, each participant for a quarter of Berlandier’s support.
  10. The first published mention of Berlandier relates to this mission to Mexico: “The young naturalist Berlandier whom the Natural History Society of Geneva sent to Mexico, arrived in Tampico” (Anonymous 1829: 75). His first publication on the observed plants is a rare 16-page booklet published in 1832 in Matamoros, *Memorias de la Comisión de Límites. Historia natural. Botánica, por el General Terán y L. Berlandier*, rediscovered by Johnston (1924: 87). It was reproduced in facsimile in Berlandier (1980: 595-614) and Osuna Sánchez (2004: 111-128).
  11. According to Geiser (1937: 44); perhaps Charles Roding or Riling, according to Kaye (2010: 129) who has conducted research about the *Hannah Elizabeth*. The very name of the ship remains dubious: perhaps there was confusion with another schooner *Hannah Elizabeth* (built in 1829) which chased in 1835 by a Mexican warship sought shelter in Matagorda Bay and ran aground on a sandbar. On the other hand the captain’s name is not mentioned in the version of *Journey to Mexico* which was translated and published (Berlandier 1980).
  12. “His later interests in the military affairs and easy familiarity with common and foot soldiers of northern Mexico and southern Texas are persuasive evidence that he was the son of a French soldier at Fort l’Ecluse (Lawson 2012: 18).”
  13. According to David Dunant (uncle of Henri Dunant, founder of the Red Cross), there were 51 druggists and grocers merchants in 1788 in Geneva, and 22 pharmacists; that confirms the distinction between drugstores and pharmacies (Dunant 1828: 116-118).
  14. The full reference (Alcocer 1899: 122) is worth quoting: “Don Luis Berlandier, conservador del Museo de Ginebra y que por amor al General Terán y á esos fértiles campos de Texas, renunció su carrera y sus derechos de ciudadano suizo, por tomar los de ciudadano mexicano.” (Don Luis Berlandier, curator of the Museum of Geneva and, for the love of General Terán and the fertile lands of Texas, gave up his career and Swiss citizen rights to take those of a Mexican citizen).
  15. There are the judgments made by Augustin Pyramus de Candolle and his son Alphonse about Berlandier (Candolle and Candolle 1862: 336-338; translated from the French) “We then had the idea ... to send a collector botanist in Mexico, and we chose Berlandier; but his vainglorious, unstable, foolishly ambitious and independent character did not endure some teasing of the part of one of us charged with the details of the trip and he departed already ill-disposed. We had thought of Mexico because of its natural riches, then but little known, and because I had made an arrangement with M. Alamán [Lucas Alamán y Escalada, 1792-1853], Minister of the Interior, who had promised protection for my employee. He did not fail to fulfill every promise; and, among other favors, he attached him to a great government expedition for the delimitation of the northern frontier. But Berlandier profited little from these advantages. He sent a small number of dried plants, badly chosen and badly prepared; he had neglected completely the sending of animals and seeds and the communication of notes on the country. At the end of some time he neglected even to write, so that for a long period we have doubted whether he was alive or dead. We therefore realized that some sixteen thousand francs had been spent for dried plants the number received were not worth a quarter of that amount!” (De Candolle, father). “Berlandier, ashamed of his conduct, pretended to be dead. I discovered in Paris that he had written a letter to the Museum to offer his services, dated December 20, 1838, twelve years after his departure. I learned later that he had become a medical doctor on his own authority, he had been employed by a Mexican general for a matter of boundaries, had settled



- in Matamoros, had practiced medicine there in a quite honorable and disinterested manner, had been sent by Arista [General José Mariano Martín Buenaventura Ignacio Nepomuceno García de Arista Nuez, 1802-1855, later President] to General Taylor [Zachary Taylor, 1784-1850, later President] to ask him not to cross the Rio Colorado, finally had perished (truly) crossing the San Fernandez [sic] River in the summer of 1851. He left manuscripts of geography and natural history about the country which were purchased at Matamoros by an officer of the United States, Lieutenant Couch, who has made a gift of them to the Smithsonian Institution, and even had the generosity of send me some dried plants with respect to the expenses that we had made to send Berlandier to America.” (De Candolle, son). Despite of thorough research in various archives (MNHN laboratories and libraries, National Archives keeping carefully classified old Museum mail), Berlandier’s letter alluded to by De Candolle is presently unlocatable.
16. However Gray, between 1853 and 1885, dedicated five species of plants to Berlandier.
  17. Available online at: <http://www.archives-numerisees.ain.fr/>.
  18. In the genealogical tree drawn by Daniel Ranchin (<http://gw.geneanet.org/danielr13?lang=fr&v=BERLANDIER&m=N>) 762 Berlandiers are identified being born in Boulbon; see also the website <http://actes.geneprovence.com/rechavancee.php> which lists 1156 acts including Berlandiers of Boulbon. The etymology of the surname seems to be well established. According to Jullien (1853: 27), a *berlandier* frequents *brelans* or *berlans*, that is to say, the places where one plays games of chance, gambling: he is a professional gambler. According to Larchey (1880: 37), he is a dice player. He is a keeper of gambling in the dictionary Reverso (<http://dictionnaire.reverso.net/francais-definition/berlandier>). The word is unknown in the Littré dictionary. Oudin and Oudin (1660: 50) already gave the same meaning of gambler to *berlandier*, but its origin is much older: it already appeared during the 14<sup>th</sup> century as *bellandier*, based on *brelan* (as *brelenc*) of the 12<sup>th</sup> century, meaning gaming table (Godefroy 1885: 626).
  19. These data come from a private card file and GGHS secretary wrote me (7 November 2013) “This document is no longer in our possession, the person who had sent us is unfortunately no longer adhering to our circle, he made the input according to his sources and we do not have a written document.” The Berlandier record is referenced as No 2247. The file has been well described by Family Search: “A French genealogical society has discovered a 100-year-old card file of 45,000 passengers, 25,000 sailors, and 5,000 retirees at Le Havre from 1780 to 1840” ([http://familysearch.org/learn/wiki/en/France\\_Emigration\\_and\\_Immigration](http://familysearch.org/learn/wiki/en/France_Emigration_and_Immigration)). It is unfortunate that a document of this importance is currently impossible to locate.
  20. Available online at: <https://ge.ch/arvaegconsult/ws/consaeg/public/fiche/NumSearch>.
  21. On the various documents reviewed, the name of the mother of Jean Louis Berlandier is constantly changing: Mari-anne Guiardel (her birth ), Marianne Guillardel (birth registration of her son), Marianne Guillardel (table of births), Marie Anne Guillard (register and table of baptisms), Marianne Gaillard (Burdet 1982), Marie Liardet (notarial act of purchase of a house), Marie Guiardet (her signature on an IOU [acknowledgement of a debt]), and name written by her husband), Marie Ghiardet (Geneva census, 1828), and Marion Guierdel (her death registration). In her native village, Farges, the name Guiardel was widespread during the eighteenth century and was voluntarily changed Guierdel in the early nineteenth; one can also encounter the spelling Guyardel.
  22. Lawson (2012: 20) had supposed Berlandier to be a Protestant to explain his inclusion in the Geneva community. Berlandier’s eldest daughter, María Luisa, was also baptized in a Catholic church, that of Nuestra Señora del Refugio in Matamoros (see Note 6).
  23. Jean Louis Chabran was born and christened in Marseille (Saint-Martin) on 27 May 1762, and died in Geneva on 1 April 1842; his own godfather, Jean Louis Fabre, already bore these first names. Thérèse Bauchier was born and baptized in Marseille (Saint-Martin) on 26 August 1763, and she died in Geneva on 18 March 1819; Jean Louis Chabran remarried in Divonne (Ain) the following year. Tobacconist in Geneva, he could have caused the moving of Jean Berlandier in this city and his setting as a manufacturer of cigars.
  24. Here it is not the place to enter into a long-standing controversy, but it is more than unclear why Muller, very meticulous, would have voluntarily kept quiet about this important point – which also does not add to or detract from the possible merits of Berlandier. Only Burdet had virtually at hand the civil registers of Geneva. All biographies published subsequently failed to note this reference, perhaps because it was written in French. Cornelius Herman Muller (1909-1997), very interested in the life of Berlandier, visited the Archives of Geneva in

- 1981; in the next year an exchange of letters happened between Muller and archivists of Geneva, and these letters which were examined in connection with the present paper (AEG Archives C110): there is nothing dealing with civil status and the birth of Jean Louis Berlandier. Anyway, these procedures were followed after the publication of Muller's work on Berlandier. Furthermore, Muller's mail points out that this American botanist intended to continue his research on Jean Louis Berlandier, which does not seem to have been published.
25. Available online at: [http://ge.ch/carte/pro/?mapresources=PATRIMOINE\\_PLANS,PATRIMOINE\\_HISTORIQUE,PATRIMOINE](http://ge.ch/carte/pro/?mapresources=PATRIMOINE_PLANS,PATRIMOINE_HISTORIQUE,PATRIMOINE) (maintain capitals).
  26. Formerly named Fort de la Cluse. Écluse is a deformation of *cluse*, a water gap. The fortress was built to control the Rhône valley between Switzerland and France.
  27. In this document there is no mention of science. Berlandier was registered at the same time as Alphonse de Candolle, who was three years younger than him.
  28. "Je fis choisir l'auteur par le Musée pour aller à Marseille recevoir une autruche vivante qu'on nous avait envoyée" (De Candolle 1862: 336) (I managed the author to be chosen by the Museum to go to Marseille to receive a living ostrich sent to us.)
  29. Set of documents entitled "Pièces concernant les dettes de Jean Berlandier et sa femme Marie Liardet demeurant à Genève – Dates 1807-1816" (Documents regarding debts of Jean Berlandier and his wife Marie Liardet living in Geneva) [ACV cote P Muret (Frères) 14]. Actually, it mainly includes two copies of deeds (1807 and 1811) concerning the acquisition of real estate at Farges, and as promissory notes (1816) two IOUs to the company "Les Frères Muret", which then operated an import trade of colonial goods in Morges.
  30. "(21 September 1811; translated from the French) ... All the places belonging to him located in the town of Farges and neighboring places, places including a ground floor containing a bedroom, a kitchen, a stable, a "feuière" [a spot where a fire is made], the surplus of this house belonging to Jean Louis Peney, brother of the seller ... 2) A garden covering approximately one "quarte", or two ares 70 centiares [270 m<sup>2</sup>] ... Item a meadow named "champ fourni", including the "Chenevrièr", of twenty two ares and twenty-eight centiares [2,228 m<sup>2</sup>] ... Item a vineyard needing three days of man works [about 3 times 5 ares, or 1500 m<sup>2</sup>], place named "ès Gollie"... Item a meadow with wood on place called "Sous les boids" [sic] covering a "quarte" and a half [about 350 m<sup>2</sup>] ... of which funds The couple Berlandier will take possession of these properties only after the death of Joseph Peney aka Bauly, who will continue to enjoy the place and keep the returns ..." (31 August 1807). "1) first a field located in the territory of Farges, in the Asseran section, a place called "à la craz" covering about twenty-two ares [2,200 m<sup>2</sup>] or a scything according to old measurements ... 2) secondly a "lêpe" [possibly a fallow field] located in the territory of "Collonges fort l'Ecluse", in a place called "sous pierre" covering approximately 10 ares [1,700 m<sup>2</sup>] or three quarters in old measurements". The place named Les Craz is located halfway between the town of Farges and the hamlet Asserans. The locality Sous Pierre is now located between Pierre d'en Haut and Pierre d'en Bas, hamlets of Collonges, and the railroad.
  31. Joseph "Bartelemi" Peney aka Bauly then Lapidaire, born on 27 March 1747 at Farges, where he died on 23 July 1816. The relationship is not specified in the act, but Joseph Peney, from the hamlet of Asserans, had been married on 30 November 1798 with Marie Guiardel (1750-1834), from the hamlet of Airans, older sister of Marie Anne Guiardel, wife of Jean Berlandier.
  32. The similarity of addresses is perplexing. Has there been a single number (175), a house occupied by Berlandier throughout their existence in Geneva, with that at No 10 Rue Cornavin being a secondary or temporary local?
  33. According to Dunant (1828: xxxvi-xl; see above, Note 13), in 1828 there were in Geneva 26 tobacco manufacturers and tobacconists, 58 grocers, 7 druggists.
  34. This act is riddled with errors, and data about the parents of Jean Berlandier are not reliable: his father, himself a farmer, would have been also named Jean, and his mother would have been named "Maurise Rose". This does not agree with the data on the civil status registers for Boulbon, available online at: [http://doris.archives13.fr/dorisuec/jsp/system/win\\_main.jsp](http://doris.archives13.fr/dorisuec/jsp/system/win_main.jsp)
  35. The date of parochial marriage should be situated between 1793 and 1802. Diocesan archives of the Bishopric of Ain were handed over the Departmental Archives in 1999. Those of Farges (FR AD01/111 J 112) begin in April 1802 and this marriage is not recorded in the register of catholicity for years 1802 and 1803. This wedding occurred during the revolutionary period: if the spouses did not share these ideas, it is possible that there has been a religious marriage celebrated by a refractory priest. One

can obviously have in mind the priest of Meyrin, Prosper Guillot, who later baptized Jean Louis Berlandier: Meyrin, not far from Farges, was included in the Ain department until 1798, and did not join Switzerland and the canton of Geneva before 1816. Brigitte Ladde, Archivist for the department of Ain, was able to give me some details about the remaining documents (pers. comm., 19 November 2013): archives of refractory priests are classified under the Series 110 J, but this set has shortcomings; for this period, the inventory indicates that there are no records kept about the town of Farges. It is unlikely that one day that date will be known with any precision, unless the archives of Meyrin are somewhere preserved and include details about that period.

36. However, Berlandier was Swiss according to Couch (1853, in Dall 1915): "a Swiss arrived to Mexico from Switzerland", and Planchon (1875, 1880), who named a species of vine *Vitis berlandieri*: "Swiss botanist Berlandier", "Swiss traveler botanist"; also for Raines (1896): "Swiss scientist"; same for Weber (1982): "a young Swiss scientist", Fischer (2011): "Swiss naturalist", and Valerio-Jiménez (2013): "the Swiss scientist"; according to Young (2009) he was furthermore military: "a Swiss officer". He was Belgian according to Standley (1920): "a Belgian", same for Pennel (1945), Stafleu and Cowan (1976), and Pinkava (2006): "Belgian explorer", Beltz (2006): "born in Belgium", and Beolens *et al.* (2011): "a Belgian botanist."
37. Geiser (1937: 42) estimated "Berlandier spent two or three years at Geneva in most profitable obscurity under DeCandolle's patronage".

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## MANUSCRIPTS

Berlandier's manuscripts are kept and catalogued in the following institutions:

Harvard University, Cambridge, MA (Gray Herbarium Library):

<http://oasis.lib.harvard.edu/oasis/deliver/~gra00013>

Smithsonian Institution Archives, Washington, DC: [http://siarchives.si.edu/collections/siris\\_arc\\_217211](http://siarchives.si.edu/collections/siris_arc_217211)

University of Texas at Austin, TX (Briscoe Center for American History):

<http://www.lib.utexas.edu/taro/utcah/00985/cah-00985.html>

Yale University, New Haven, CT (Beinecke Rare Book and Manuscript Library):

<http://hdl.handle.net/10079/fa/beinecke.berlandi>

Two other manuscripts are deposited at the Gilcrease Museum, Tulsa, OK, but the Library and Archival department is currently closed (08.2014) and will be moved to the Helmerich Center for American Research, Tulsa.

## APPENDIX 1

Non-exhaustive listings of taxa dedicated to Jean-Louis Berlandier. Original names (basionyms or protonyms) and current families, arranged in chronological order.

### Plants

*Hibiscus berlandierianus* Moricand, 1830 (Malvaceae)

*Calylophus berlandieri* Spach, 1835 (Onagraceae)

*Berlandiera* De Candolle, 1836 (genus, Asteraceae)

*Eupatorium berlandieri* De Candolle, 1836 (Asteraceae)

*Linum berlandieri* Hooker, 1836 (Linaceae)

*Pectis berlandieri* De Candolle, 1836 (Asteraceae)

*Perymenium berlandieri* De Candolle, 1836 (Asteraceae)

*Cacalia berlandieri* De Candolle, 1838 (Asteraceae)

*Gnaphalium berlandieri* De Candolle, 1838 (Asteraceae)

*Gynoxys berlandieri* De Candolle, 1838 (Asteraceae)

*Lobelia berlandieri* De Candolle, 1839 (Campanulaceae)

*Atriplex berlandieri* Moquin-Tandon, 1840 (Chenopodiaceae or Amaranthaceae)

*Chenopodium berlandieri* Moquin-Tandon, 1840 (Chenopodiaceae or Amaranthaceae)

*Anemone berlandieri* Pritzell, 1841 (Ranunculaceae)

*Fraxinus berlandieriana* De Candolle, 1844 (Oleaceae)

*Lippia berlandieri* Schauer, 1847 (Verbenaceae)

*Onychacanthus berlandierianus* Nees, 1847 (Acanthaceae).

*Sarratia berlandieri* Moquin-Tandon, 1849 (Amaranthaceae)

*Lycium berlandieri* Dunal, 1852 (Solanaceae)

*Acleisanthes berlandieri* Gray, 1853 (Nyctaginaceae)

*Cereus berlandieri* Engelmann, 1856 (Cactaceae)

*Croton berlandieri* Torrey, 1859 (Euphorbiaceae)

*Jatropha berlandieri* Torrey, 1859 (Euphorbiaceae)

*Mimosa berlandieri* Gray, 1859 (Mimosaceae)

*Oxalis berlandieri* Torrey, 1859 (Oxalidaceae)

*Stevia berlandieri* Gray, 1859 (Asteraceae)

*Acacia berlandieri* Benthham, 1875 (Fabaceae)

*Dasyllirion berlandieri* Watson 1879 (Agavaceae)

*Esenbeckia berlandieri* Baillon, 1879 (Rutaceae)

*Gutierrezia berlandieri* Gray, 1880 (Asteraceae)

*Vitis berlandieri* Planchon, 1880 (Vitaceae)

*Abutilon berlandieri* Gray, 1885 (Malvaceae)

*Polygala berlandieri* Watson, 1886 (Polygalaceae)

*Lesquerella berlandieri* Watson, 1888 (Brassicaceae)  
*Citharexylum berlandieri* Robinson, 1891 (Verbenaceae)  
*Chrysopsis berlandieri* Greene, 1894 (Asteraceae)  
*Halimium berlandieri* Briquet, 1907 (Cistaceae)  
*Brahea berlandieri* Bartlett, 1935 (Arecaceae)  
*Astragalus crassicaarpus* var. *berlandieri* Barneby, 1956 (Fabaceae)

#### Animals

*Helix (Helocogena) berlandieriana* Moricand, 1833 (Polygiridae)  
*Sigmodon berlandieri* Baird, 1855 (Cricetidae)  
*Blarina berlandieri* Baird, 1857 (Soricidae)  
*Taxidea berlandieri* Baird 1857 (Mustelidae)  
*Unio berlandieri* Lea, 1857 (Unionidae)  
*Xerobates berlandieri* Agassiz, 1857 (Testudinidae)  
*Thryothorus berlandieri* Baird, 1858 (Troglodytidae)  
*Rana berlandieri* Baird, 1859 (Ranidae)  
*Bulinus berlandierianus* Binney, 1865 (Physidae)

## APPENDIX 2

Reference added after the proof:

Breure, A.S.H. and E. Tardy 2016. From the shadows of the past: Moricand senior and junior, two 19th century naturalists from Geneva, their newly described taxa, and molluscan types. *Revue suisse de Zoologie* **123**: 113-138.

The authors mention “the Belgian explorer Jean Louis Berlandier”, with 1805 as year of birth (see Note 36).

## Johann Georg Wagler and the “*Natürliches System der Amphibien*”

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Johann Georg Wagler (1800–1832) published two separate and important works during 1830, both of which were similarly titled “*Natürliches System der Amphibien*.” In the text volume (Wagler 1830a), Wagler proposed a new zoological classification for mammals, birds, reptiles, and amphibians. Wagler (1830a) also described several new genera. In his second work, Wagler (1830b) produced a folio of seven copper plates, with plates 1–7 (using Arabic Numerals) containing between 41–56 figures each (using either Arabic or Latin Numerals for those figures). Those plates are preceded by two unnumbered pages of figure legends (“*Explicatio Tabularum*”) in which Wagler introduces new turtle and crocodile species names and illustrates those new nominal taxa (6 plates of turtles, 1 of crocodiles). Wagler (1830b) also illustrates a few previously described taxa. All species combination names illustrated or mentioned in that work are listed in our Table 1 along with their current taxonomy. The Wagler (1830b) folio is an exceedingly rare work and is consistently cited erroneously in the literature, suggesting that few authors referencing that work actually saw a copy of it. Herein, we comment about Wagler’s folio after examining a copy, and also provide a short history leading up to both of Wagler’s (1830a, 1830b) works.

In 1826, the Königlich Bayerische Akademie der Wissenschaften zu München (Royal Bavarian Academy of Science in Munich) appointed Wagler to create a state-of-the-art classification for amphibians and reptiles (Wagler 1828b: col. 861; Wagler 1830a: p. iii). Wagler was young, but the correct person for this project. He was a promising, hardworking zoologist with special emphasis in herpetology (Adler 2014). With as-

sistance from Johann Baptist Ritter von Spix (1781–1826), he had published his first book “*Serpentum Brasiliensium*” (Wagler 1824), and was working on his second book “*Systema Avium*” (Wagler 1827). Wagler had visited the natural history museums in London, Paris, Leyden, Frankfurt am Main, and Berlin, and was in friendly contact with leading European scientists like Alexander von Humboldt, Georges Cuvier, Coenraad Jacob Temminck, Martin Hinrich Carl Lichtenstein, and Heinrich Boie (e.g., Schmidt and Voigt 1834; *Deutsches Literaturarchiv Marbach*, Cotta-Archiv, subsequently referred to as DLM-CA, No. 18, 31).

The order for Wagler to work on the “*Systema Amphibiorum*” (Wagler combined amphibians and reptiles) by the Bavarian Academy was based on a suggestion by Spix (Wagler 1830a: p. iii). The intention was to create a modern natural classification of amphibians and reptiles adapted from their morphology, anatomy, and general biology (Wagler 1828b: col. 861).

In June 1828, Wagler received a state grant of 800 Gulden (historical currency of Bavaria, comparable to a modern day value of about 17,800 US\$; [www.bundesbank.de](http://www.bundesbank.de)) by the Bavarian Ministry of the Interior to cover printing costs of his “*Systema Amphibiorum*,” and was also authorized to publish this work in the publishing house of Johann Friedrich Cotta in Munich (DLM-CA No. 30). By this time, Wagler had already finished the text manuscript of the “*Systema Amphibiorum*,” a result of ten years labor with “*inniger Lust und Liebe*” (innermost delight and love; DLM-CA No. 30). To announce his work, Wagler went to the annual meeting of the “*Gesellschaft Deutscher*

Naturforscher und Ärzte” (Society of the German naturalists and physicians) in September 1828 in Berlin, and presented some parts of his “Systema Amphibiorum” (Humboldt and Lichtenstein 1829). In addition, Wagler published two articles containing some extracts from the “Systema Amphibiorum”, along with additional remarks in the journal *Isis* (Wagler 1828a, 1828b).

The organization and format of Wagler’s “Systema Amphibiorum” changed during the book’s development process. At an early stage, in June 1828, Wagler wrote to his publisher J. F. Cotta that he had planned two volumes each consisting of 12 to 16 sheets with text [= 192–256 pages] in great octavo format (gr. 8°) along with 15 to 18 anatomical tables in large folio format (DLM-CA No. 30). The work should be considered a general classification of the higher level taxa of reptiles and amphibians such as order, families, and genera, but not species. It took about one year of negotiations between Wagler, Cotta, and the Bavarian Ministry about costs, style, marketing, and number of free copies for the Bavarian Academy until they reached an agreement. In June 1829, Wagler considered the folio format for the text volume which was earlier decided for the anatomical tables, but gave the final decision about format and style to his publisher J. F. Cotta “... denn in solchen Sachen ist Ihr Geschmack immer der beste.” (in such matters your taste is always the best; DLM-CA No. 32). The text volume and the atlas folio were printed in the first half of 1830, but not released by Cotta until the final third of 1830 (DLM-CA No. 35). Finally, the “Systema Amphibiorum” was published in two parts, the first a non-illustrated text volume (Wagler 1830a) in octavo format (gr. 8°), and the second as an atlas with anatomical plates (Wagler 1830b) in large folio format (gr. 2°).

Wagler’s “Natürliches System der Amphibien” (Wagler 1830a) includes the biological classification – order, families, and genera – of mammals, birds, reptiles, and amphibians. This book has two unnumbered plates at the end, one untitled and showing 11 figures of various animals like dolphin, duckbill, iguana, leatherback turtle, and a pterosaur along with their vernacular names in the plate legend on pp. 343–344. The second plate

(folded) is titled “Tafel der Verwandtschaften der Säugethiere [sic], Greife, Vögel und Amphibien” (Table of the relationships of mammals, griffins [= animal class erected by Wagler containing Monotremata, Ichthyosaur, Plesiosauria, and Pterosaurs], birds and amphibians), but does not give scientific names of the species presented in this plate and shows a circular schema of the systematic relationships of mammals, griffins, birds, reptiles, and amphibians, as perceived by Wagler. Wagler (1830a) erected many new amphibian and reptile genera such as: amphibians (frogs) – *Alytes*, *Dendrobates*, *Phyllomedusa*, *Scinax*; (salamanders) – *Salmandrops*; reptiles (lizards) – *Cnemidophorus*, *Norops*, *Sphaerodactylus*, *Zootoca*; (snakes) – *Eunectes*, *Epicrates*, *Oxybelis*, *Spilotes*; (amphisbaenians) – *Blanus*; (turtles) – *Hydromedusa*, *Pelomedusa*, *Podocnemis*, *Staurotyphus*; (crocodilians) – *Champsia*. However, Wagler (1830a) did not present any species descriptions. Many of these genera names remain valid today.

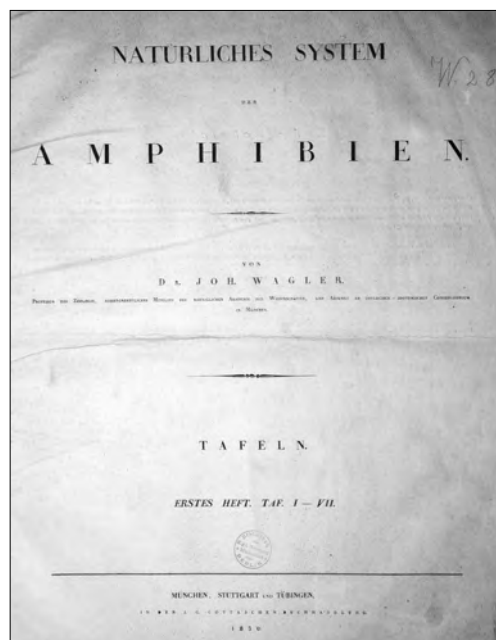
The atlas folio (Wagler 1830b) was published as a separate book with an abbreviated title, its own cover page and preface (Fig. 1). Regarding this, the figure on page 21 in Adler (2014) is misleading, since it shows a detail from plate 3 of the folio (Wagler 1830b) together with the cover page of the text (Wagler 1830a). The folio was also printed in smaller numbers with only 200 copies, whereas 500 copies of the text were issued (H. Mojem, pers. comm.; 3 February 2015). Also, former booksellers such as Wilhelm Engelmann (1808–1878) considered both books as separate publications and listed the text volume for 2¼ Taler (historical currency in Germany, comparable to a modern value of about 68 US\$; [www.bundesbank.de](http://www.bundesbank.de)), and the folio for 4 ⅔ Taler (Engelmann 1846), which is comparable to a value of about 200 US\$.

A copy of Wagler’s rare (1830b) folio was located at the Museum für Naturkunde Berlin, where it had remained uncatalogued for years. It has a large folio format (gr. 2°) with a size of 480 mm x 680 mm. The Berlin copy includes the title followed by the preface on the back side titled “Zur Nachricht,” and two unnumbered pages of figure legends titled “Explicatio Tabularium.” The figure legends include species names and short de-

scriptions (in Latin) of each figure of the seven copper plates (Figs. 2a-b). The plates themselves are numbered with the Arabic “Tab. 1–7”. Plates 1–6 illustrate bodies and shells and skeletal parts of 28 turtle species, and plate 7 the bodies and skeletal parts of five crocodile species (only generic names are given on the plates themselves). All figures were drawn by the Bavarian lithographer and artist Josef Karl Weber (signature Carol Weber; 1801–1875) under the direct supervision of Wagler (DLM-CA No. 30). The collective use of Arabic and Latin numbers on the same plate as in the “Explicatio Tabularium” is confusing, as exemplified by *Chelonia Caouana* on Tab. I with Figs. I–XXVI, and by *Dermatochelys porcata* on Tab. I with Figs. 1–23. Following the seven numbered plates are two unnumbered plates identical to the two plates included in the Wagler text volume (1830a). Another copy of the folio at the university library of Munich (Germany) is similar to the Berlin copy, but does not contain the two unnumbered plates found in the Berlin copy (I. Friedl, pers. comm.; 9 January 2015). According to Wagler’s preface (1830b), the publication of further single folios was planned to cover all amphibian and reptile taxa mentioned in his text work, but those ideas were suddenly ended by Wagler’s death at the age of 32 from gangrene resulting from a self-inflicted gunshot wound to the arm (Schmidt and Voigt 1834).

The Wagler (1830a) text volume contains a systematic classification with order, family, and genus, but without proposals for any new species names. Those new species names are established (in his legends to the illustrations) in the folio for some turtles and crocodiles (Wagler 1830b). The case of the turtle name *Dermatochelys porcata*, a junior synonym of *Testudo coriacea* Vandelli, will help illustrate Wagler's (1830a, 1830b) methods and intentions. Wagler (1830a: p. 133) introduces the new turtle genus name *Dermatochelys* (Fig. 3), apparently as a replacement name for *Sphargis* Merrem, and includes "*Testudo coriacea* Linn." in that genus. Wagler (1830a: p. 133) also refers to "Tab. I. F. 1–23" in Wagler (1830b) (Fig. 4).

However, Wagler (1830b), in the “Explicatio Tabularum” in his folio, actually introduces the species name *Dermatocheilus porcata* in the leg-



**FIGURE 1.** Title page of the atlas folio “*Natürliches System der Amphibien*” (Wagler 1830b). This copy is located at the Museum für Naturkunde Berlin.

end for those illustrations in “Tab. I. Fig. 1–23.” Wagler (1830a: p. 133) wrote “*Lesr.*” [= Lesueur, Charles-Alexandre; 1778–1846] following his introduction of *Dermatochelys* and in a footnote on that page wrote “*Les. in Cuv.*” That reference is to the second edition of “Le Règne Animal” (Cuvier 1829). Wagler (1830a) apparently overlooked the earlier name *Dermochelys* Blainville (1816: p. 111). *Dermochelys* was derived from the Greek word *derma* for skin, and *chelys* for turtle, and *Dermochelis* is now treated as an erroneous subsequent spelling for *Dermochelys* (see Hemming 1956). However, Wagler (1830a: pp. iv–v) intended to clarify wrong and misleading names that occur in the literature, and apparently “corrected” *Dermochelis* to *Dermatochelys* using the regular verb form of *derma*, which is used in combining two words (Baur 1888). A common example of the above compound word is “dermatologist” instead of “dermalogist”. Therefore, we disagree in treating *Dermatochelys* as an “error” as was done by Fritz and Havaš (2007: p. 174), but rather as a “nomen novum” as was done by Fritz and Havaš (2006: p. 22) and TTWG (2014: p. 344). The complete name *Dermatochelys porcata* is only given once by Wagler in



## EXPLICATIO TABULARUM.

## T A B. I.

- Fig. I. *Chelonia Caouana* SCHWEGG.  
 — II. Eadem a ventre.  
 — III. Eiusdem skeleton a latere.  
 — IV. Idem a ventre, sterno remoto.  
 — V. Caput *Chelonie Caouana*, superne.  
 — VI. Idem, inferne.  
 — VII. Idem a latere cum mandibula ramo dextro ab externo XII, et ramo sinistro ab interno latere, XIII.  
 — VIII. Idem a tergo.  
 — IX. Idem a fronte.  
 — X. Maxilla inferior *Chel. Caouana*, superne, eadem.  
 — XI. Inferne visum.  
 — XIV. Maxillae superioris indumentum corneum (rhinotheca), inferne.  
 — XV. Maxilla inferior cum indumento corneo (gnathotheca) ac cum lingua, mento ex omni parte adnata.  
 — XVI. Os hyoides, superne, amota parte linguali XVII.  
 — XVIII. Vertebrae colli duae, conjunctae sibi, a latere.  
 — XIX. Vertebra colli octava, ultima, a latere.  
 — XX. Vertebra colli eadem a fronte, XXI a tergo visae.  
 — XXII. Furcula, scapula, clavicula ex utroque trunci latere a fronte visae. Os utriusque inferius apice dilatatum a reliquis sutura differentem est clavicula, scapula plurimorum.  
 — XXIII. Pelvis cum osse sacro, inferne visae.  
 — XXIV. Pelvis pars sinistra a latere et paulo interne visae, foveae articulares partem monstrans.  
 — XXV. Testa dorsalis speciminis junioris *Chelonae Caouana* a latere interno visa, margine scutellis corneis vestita.  
 — XXVI. Sternum *Caouanae* junioris a scutis deudatum, inferne.

Fig. 1 — 23. Genus *Dermatochelys*. Icones omnes e specimine pullo *Testudinis coriaceae* Linn., magnitudine aucta, praeter figuras 1. 2. 3. 4. 23.

Fig. 1. *Dermatochelys porcata*.

- 2. Eadem a ventre.  
 — 3. Eiusdem skeleton a latere.  
 — 4. Idem a ventre, sterno remoto.  
 — 5. Caput, superne.  
 — 6. Idem, inferne visum.  
 — 7. Idem a latere, adjecta mandibula 19 a facie externa, et, 13, interna.  
 — 8. Caput a tergo.  
 — 9. Caput a fronte.  
 — 10. Maxilla inferior, inferne, Fig. 11. superne.  
 — 14. Rhinotheca, inferne.  
 — 15. Maxillae inferioris pars indumento corneo obducta cum lingua.  
 — 16. Os hyoides, inferne visum.  
 — 17. Scapula, furcula et clavicula a fronte.

## Fig. 18. Ossa haec a ventre.

- 19. Ossa haec a latere, foveam articulare humeri exhibentia.  
 — 20. Humerus.  
 — 21. Pelvis a ventre.  
 — 22. Pelvis a tergo.  
 — 23. Testa dorsalis, cum sterno lateri sinistro adhaerente, ambo a latere interno visa.

## T A B. II.

Fig. I. *Aspidonectes javanicus*.

- II. Idem a ventre.  
 — III. Eiusdem testa dorsalis, remoto integumento cutaneo.  
 — IV. Eiusdem caput, superne.  
 — V. Inferne visum.  
 — VI. Idem a latere.  
 — VII. Idem a tergo.  
 — VIII. Idem a fronte.  
 — IX. Eiusdem maxilla inferior, superne, et X, inferne visa.  
 — XI. Eiusdem ramus dexter ab externo, sinister XII ab interno latere.  
 — XIII. Pelvis *Aspidonectis gangetici* (*Trionyx gangetici* Duvauclli. Cuv. Rech. sur les os. foss. T. V. p. II. p. 222.) secundum Cuvier figuram I. c. t. XII. f. 21.  
 — XIV. Eadem a latere sec. Cuv. I. c. f. 22.  
 — XV. Scapula, furcula et clavicula eiusdem testudinis sec. Cuv. I. c. f. 4.  
 — XVI. Pes anterior sinister *Aspidonectis gangetici* sec. Cuv. I. c. f. 14.  
 — XVII. Pes posterior sinister eiusdem testudinis sec. Cuv. I. c. f. 38.  
 — XVIII. Os hyoides *Aspid. gang.* sec. Cuv. I. c. f. 42.  
 — XIX. Natus *Aspidonectis nilotici* magnitudine naturali.  
 — XX. Sternum *Aspidonect. ganget.* sec. Cuv. I. c. f. 46.  
 — XXXIV. Testa dorsalis *Aspidonectis* (?) *carinati* (*Trion. carinati* GÜNTHER) secundum GÜNTHER iconem. (Annales du Mus. d'hist. nat. XIV. p. 14. t. 4.)  
 — XXXV. Sternum eiusdem testudinis sec. GÜNTHER I. c.

Fig. XXI. *Trionyx coronandelicus* GÜNTHER (*Testudo granosa* SCHWEGG.).

- XXII. Idem a ventre.  
 — XXIII. Eiusdem sternum a latere inferiori.  
 — XXIV. Eiusdem caput, \*) superne.  
 — XXV. Idem, inferne.  
 — XXVI. Idem, a latere.  
 — XXVII. Idem, a fronte.  
 — XXVIII. Eiusdem maxilla inferior, inferne.  
 — XXIX. Eadem superne visa.  
 — XXX. Ramus dexter maxillae inferioris ab externo, sinister XXXI ab interno latere.

\*) Item e specimine in acceptione larum.

- Fig. XXXII. Maxilla eiusdem testudinis inferior cum toniorum vagina cornea, labiis carnosus externis et internis nec non cum lingua.  
 — XXXIII. Eiusdem testudinis rhinotheca cornea ab interno latere.

Fig. XXXVI. *Pelomedusa galeata* (Test. gal. SCHWEGG.).

- XXXVII. Eiusdem testa ab inferiori latere.  
 — XXXVIII. Sternum *Pelomed. gal.* a latere, cum pelvi, sterno per symphysin affixa.  
 — XXXIX. Caput huius testudinis a superiori latere.  
 — XL. Idem a latere.  
 — XLI. Eiusdem maxilla inferior, superne.  
 — XLII. Eadem, inferne.  
 — XLIII. Ramus maxillae inferioris sinister ab externo, idem XLIV ab interno latere.

## T A B. III.

- Fig. I. *Chelys Matamora*.  
 — II. Eadem a ventre.  
 — III. Eiusdem skeleton a latere.  
 — IV. Idem a ventre.  
 — V. Caput huius testudinis, superne.  
 — VI. Idem, inferne.  
 — VII. Idem, a latere, addito mandibulae ramo dextro F. XII.  
 — VIII. Idem, a tergo.  
 — IX. Idem, a fronte.  
 — X. Maxilla inferior, inferne.  
 — XI. Eadem, superne.  
 — XIII. Ramus sinister maxillae inferioris a latere interno.  
 — XIV. Os hyoides, superne, cum parte linguali XVI.  
 — XV. Idem a latere, cum parte linguali a latere XVII.  
 — XVIII. Testa dorsalis a ventre, remotis scutis corneis marginalibus et sterno.  
 — XIX. Sternum a latere interno.  
 — XX. Idem a latere cum cardinis processibus et cum pelvi, sterno per symphysin affixa.  
 — XXI. Scapula, furcula et clavicula (os inferius, apice dilatatum) ex utroque trunci latere, a fronte.  
 — XXII. Pelvis pars dextra a latere externo (resupinata).  
 — XXIII. Eadem a latere interno.  
 — XXIV. Spinæ dorsalis vertebra prima a fronte.

Fig. XXV. *Hydromedusa Maximiliani* (Enys Maximiliani MEX.).

- XXVI. Eadem a ventre.  
 — XXVII. Caput eiusdem testudinis, superne.  
 — XXVIII. Idem, inferne.  
 — XXIX. Idem, a latere, adjecto ramo mandibulae dextro, XXXIV.  
 — XXX. Idem, a tergo.  
 — XXXI. Idem, a fronte.  
 — XXXII. Eiusdem maxilla inferior, inferne.

## Fig. XXXIII. Eadem, superne.

- XXXV. Eius ramus sinister a latere interno.  
 — XXXVI. Rhinotheca cornea.  
 — XXXVII. Gnathotheca cornea.  
 — XXXVIII. Testa dorsalis a latere interno, ex eadem juniore testudine, margine scutellae et latere dextro scutis dorsalis corneis destituta. Costae, ubi versus ossa marginalia testae tendunt, angustatae sunt ac hiatus inter se latum reliquant, quem serius costarum amplificationes apicales expleant.  
 — XXXIX. Eiusdem junioris testudinis sternum a latere interno, in medio adhuc perforatum.  
 — XL. Sternum hoc a latere cum pelvi per symphysin affixa.  
 — XLI. Pelvis *Hydromedusae Maximiliani* a fronte.  
 — XLII. Scapula, furcula et clavicula eiusdem speciei a fronte.

- Fig. XLIII. *Rhinemys rufipes* (Enys rufipes SIN.).  
 — XLIV. Eadem a ventre.  
 — XLV. Eadem a fronte, collo lateraliter flexo.

## T A B. IV.

- Fig. I. *Podocnemis expansa* (Enys expansa SCHWEGG.) Animal juvenile.  
 — II. Eadem a ventre.  
 — III. Skeleton eiusdem a latere.  
 — IV. Skeleton a ventre, sterno remoto.  
 — V. Caput eiusdem testudinis, superne.  
 — VI. Idem, inferne.  
 — VII. Idem, a latere.  
 — VIII. Idem, a tergo.  
 — IX. Idem, a fronte.  
 — X. Maxilla inferior, remoto indumento toniorum corneo, inferne.  
 — XI. Eadem, superne.  
 — XII. Eiusdem ramus sinister ab interno, et, XIII, ramus dexter ab externo latere.  
 — XIV. Rhinotheca cornea.  
 — XV. Gnathotheca cornea.  
 — XVI. Os hyoides, superne.  
 — XVII. Vertebra colli ultima (octava) a latere dextro.  
 — XVIII. Eadem a fronte.  
 — XIX. Eadem a tergo.  
 — XX. Vertebra colli tertia a latere dextro.  
 — XXI. Eadem a fronte.  
 — XXII. Eadem a tergo.  
 — XXIII. Furcula, scapula et clavicula (os inferius, apice dilatatum) ex utroque trunci latere, a fronte.  
 — XXIV. Pelvis a latere externo foveam articulare femoris monstrans; resupinata.

FIGURE 2a. Front side of the "Explicatio Tabularum" of Wagler's atlas folio (Wagler 1830b). The figure legends include species names and short descriptions of each figure of the seven copper plates. Wagler introduces the complete name *Dermatochelys porcata* herein for the first time along with a short description (Fig. 1–23, highlighted).

Fig. XXV. Eadem a latere interno; resupinata.	Fig. XIII. sternum a latere interno.	tellis corneis denudata, ossium suturas denticulatas ac scutellorum impressiones marginales exhibentia.	Fig. 48. Lingua Testudinis praecedentis.
— XXVI. Testa dorsalis a latere inferiori, amotis scutellis marginalibus corneis.	— XIV. Idem, a latere cum caroline.		— 49. Os hyoideus Testudinis radiatae; F. 50 eiusdem pars lingualis.
— XXVII. Sternum cum carolinis processibus et cum pelvi, sterno per symphysin affixa.	— XV. Caput eiusdem testudinis, superne.	Fig. VII. Testudo Boii.	T A B. VII.
— XXVIII. Idem, a latere cum pelvi.	— XVI. Idem, inferne.	— VIII. Eadem a ventre.	Fig. I. <i>Champsia sclerops</i> . (Proc. scler. Scler.) I. F. 1. Caput <i>Champsiae nigrae</i> (Caiman nig. Strix), a latere. I. F. 2. Idem, superne.
— XXIX. Caput scutellis tectum, magnitudine naturali.	— XVII. Idem, a latere.	— IX. <i>Testudo tabulata</i> , junior ( <i>Test. denticulata</i> Linn.) a fronte, caput sub testam recondens.	— II. <i>Crocodylus biporcatus</i> . II. Fig. 1. Caput <i>Crocodyli nilotici</i> , a latere. II. F. 2. Idem, superne.
— XXX. Pes posticus ab interno, F. XXXI. ab externo latere, ad monstranda scutella cornea semilunaria, cuti imposita.	— XVIII. Idem, a tergo.	Fig. 1. Caput <i>Testudinis tabulatae</i> (e specimine adulto), superne.	— III. <i>Ramphostoma tenuirostre</i> . (Gaviola tenuirostre Cuv.) III. F. 1. Caput <i>Ramphostomatos</i> , superne. (Icon. sec. Cuvier, Rech. sur les oss. foss. N. Edit. V. P. II. et III.) III. F. 2. Eiusdem <i>Ramphostomatos</i> maxilla inferior.
Fig. 1. <i>Platynis canaliculata</i> . ( <i>Test. platyniceps</i> Schöer.)	— XIX. Idem, a fronte.	— 2. Idem, inferne.	Fig. 1. Caput <i>Champsiae sclerops</i> , superne.
— 2. Eadem a ventre.	— XX. Maxilla inferior, superne.	— 3. Idem, a latere.	— 2. Eiusdem maxilla inferior cum lingua.
— 3. Eadem a fronte, collo lateraliter flexo.	— XXI. Gathotheca cornea.	— 4. Idem, a tergo.	— 3. Maxillae inferiores ramus sinister a latere interno.
— 4. Sceletum eiusdem a ventre.	— XXII. Rhinotheca, inferne, XXIII, a latere.	— 5. Idem, a fronte.	— 4. Caput eiusdem <i>Champsiae</i> , dentibus praeditum ut horum foveae videri possint.
— 5. Idem a latere.	— XXIV. Os hyoideus, superne.	— 6. Maxilla inferior, inferne, eadem, F. 7, superne visa.	— 5. Dens nullus, imperfectus, qui in radice cavo anterioris maxillae dentis, F. 6, latuit.
— 6. Caput eiusdem, junioris testudinis, magnitudine aucta, superne.	— XXV. Scapula, furcula et clavicula pedis dextri a latere interno.	— 8. Ramus maxillae inferioris ab interno, F. 9. ab externo latere.	— 8. Dens similis nullus, dentis maxillae postremi, obtusis, F. 7.
— 7. Idem, inferne.	— XXVI. Pelvis pars dextra a latere.	— 10. Gnathotheca cornea <i>Testudinis radiatae</i> , tomio duplici denticulato, et praeterea in apice dextro aucta.	— 9. Caput <i>Champsiae scl.</i> a tergo.
— 8. Idem, a latere.	— XXVII. Pelvis a tergo cum duabus vertebrosis ossis sacri.	— 11. Rhinotheca cornea eiusdem <i>Testudinis</i> , apice fovea aucta ad recipiendum gnathothecae dextrum; latera rhinothecae interne elevato-striatae, ac sciebibus duobus emergentibus, subdenticulatis praedita sunt.	— 10. Os hyoideus eiusdem <i>Champsiae</i> , inferne.
— 9. Idem, a tergo.	— XXVIII. Eadem a fronte.	— 12. Gnathotheca <i>Testudinis graecae</i> . Dextrum ac tomiorum denticulis subobsoletis.	— 11. Vertebra colli secunda a latere dextro.
— 10. Idem, a fronte.	Fig. XXIX. <i>Cinosternon hirtipes</i> (vid. Syst. p. 137.)	— 13. Rhinotheca eiusdem testudinis.	— 12. Vertebra colli prima (Atlas) a latere dextro.
— 11. Maxilla huius inferior, inferne.	— XXX. Idem, a ventre.	— 51. Caput <i>Testudinis indicae</i> (secundum Cuvier, Rech. sur les oss. foss.) a latere.	— 13. Osiculum cacumini colli vertebrae primae ligamentis affixum, paullo a tergo.
— 12. Eadem, superne.	— XXXI. Caput <i>Cinost. scorpioides</i> (Em. scorp. Scaveng.), superne.	— 52. Idem, superne.	— 14. Atlas, inferne.
— 13. Eius ramus sinister ab interno, et 14, ramus dexter ab externo latere.	— XXXII. Idem, inferne.	— 53. Idem, inferne.	— 15. Colli vertebra quarta a latere (retroversa.)
— 15. Gnathotheca cornea.	— XXXIII. Idem, a latere, adjecto mandibulae ramo dextro.	— 14. Vertebra colli prima, Atlas, anteriora, et eadem, F. 15, posteriora spectant.	— 16. Eadem a fronte.
— 16. Rhinotheca cornea cum naso.	— XXXIV. Idem, a fronte.	— 17. Vertebra colli secunda, epistropheus, a fronte (resupinata.)	— 17. Eadem a tergo.
— 17. Os hyoideus, inferne.	— XXXV. Idem, a tergo.	— 18. Vertebra eadem a tergo (resupinata.)	— 18. Vertebrae colli tres sibi conjunctae, a latere inferiori.
— 18. Colli vertebra ultima (octava) a latere dextro.	— XXXVI. Eiusdem maxilla inferior, inferne; XXXVII. eadem, superne.	— 19. Vertebra eadem a latere (reversa.)	— 19. Vertebra dorsi prima, a tergo.
— 19. Eadem a fronte.	— XXXVIII. Eiusdem testudinis os hyoideus, superne.	— 20. Ultima colli vertebra, octava, a fronte.	— 20. Eadem a latere sinistro, antecedente ac iuncta ut vertebra colli ultima.
— 20. Eadem a tergo.	— XXXIX. Sternum a latere interno, in tres partes, ligamentis sibi iunctas, divisionem, unde in lobo antico et postico mobile.	— 21. Eadem, a tergo.	— 21. Vertebra dorsi, costa privata, a latere.
— 21. Sternum a latere interno (e specimine pullo).	— XL. Scapula, furcula et clavicula pedis dextri a latere interno.	— 22. Eadem, inferne.	— 22. Eadem a fronte.
— 22. Testa dorsalis a latere ventrali.	— XLI. Pelvis, inferne visa.	— 23. Eadem, superne.	— 23. Eadem a tergo.
— 23. Furcula, scapula et clavicula ex utroque trunci latere, a fronte.	— XLII. Pelvis pars dextra a latere externo.	— 24. Eadem, a latere dextro.	— 24. Eadem superne visa.
— 24. Pelvis pars dextra a latere interno; resupinata.	— XLIII. Pelvis tota a tergo.	— 25. Vertebra caudae prima a fronte.	— 25. Pelvis a latere dextro, cum duabus vertebrosis ossis sacri.
— 25. Eadem, a latere externo.	Fig. XLIV. <i>Siaurotypus triporcatus</i> . ( <i>Terrapene triporcata</i> Wieg.)	— 26. Eadem, a dorso.	— 26. Eadem a fronte.
— 26. Pes posticus, tibiae basi fovea, plantae marginem recipiente, auctus.	— XLV. Idem a ventre.	— 27. Eadem, superne.	— 27. Eadem a latere inferiori, retroversa.
T A B. V.	Fig. XLVI. <i>Chelydra lacertina</i> Scaveng.	— 28. Eadem, inferne.	— 28. Vertebrae ossis sacri, superne.
Fig. I. <i>Clemmys caspica</i> (Enys caspica Scaveng.)	— XLVII. Eiusdem testudinis sternum scutis tectum.	— 29. Eadem, a latere dextro.	— 29. Vertebrae primores caudae duae, sibi iunctae, a latere, retroversa.
— II. Eadem a ventre.	Fig. XLVIII. <i>Phrynosoma Geoffroyana</i> (Enys Geoffr. Scaveng.)	— 30. Vertebra caudae octava, superne (reversa.)	— 30. Vertebrae posteriores caudae duae sibi iunctae.
— III. Eadem a fronte, capite infra testam retracto.	— XLIX. Eadem a ventre.	— 31. Eadem, a dorso.	— 31. Processus spinosus inferior vertebrae caudalis, a tergo visus.
— IV. Eiusdem caput a latere, adjecto mandibulae ramo dextro.	— L. Eadem a fronte, collo lateraliter flexo.	— 32. Eadem, inferne.	— 32. Femur.
— V. Idem, superne.	— LI. Huius testudinis pelvis a latere, foveam articulem femoris monstrans.	— 33. Eadem, superne.	— 33. Humerus.
— VI. Pelvis <i>Clemm. punctatae</i> (Test. punct. Schöer.), inferne; magnitudine aucta.	T A B. VI.	— 34. Eadem, a latere sinistro.	— 34. Clavicula cum parte scapulae; resupinata.
— VII. Sternum eiusdem testudinis a latere interno, cum furcula, scapula et clavicula utriusque lateris trunci, situ naturali.	Fig. I. Sceletum <i>Testudinis radiatae</i> , a ventre, sterno abscisso. Icon e specimine adulto.	— 35. Vertebra ossis sacri ultima (secunda) a dorso.	— 35. Costa singula a tergo.
Fig. VIII. <i>Enys europaea</i> .	— II. Idem, a latere. Nota. Vertebrae dorsi primam in hac figura male delineatam vide apud fig. 42.	— 36. Vertebrae dorsi prima anteriora spectant.	— 36. Oculi cum membrana nictitante, et auris cum valvula, quae asterico notata est.
— IX. Eadem a fronte.	— III. Testa dorsalis <i>Testudinis graecae</i> , inferne.	— 37. Pelvis <i>Testudinis radiatae</i> a latere anteriori.	— 37. Nasus, a latere.
— X. Eiusdem scleton a latere, collo retracto.	— IV. Sternum <i>Testudinis graecae</i> , interne visum, carlinis processum in utroque latere anteriorem et posteriorem elongatum exhibens.	— 38. Eadem, a tergo.	— 38. Idem, superne visus.
— XI. Idem, a ventre, collo exserto.	— V. Testa dorsalis et sternum, VI, scutis tectum.	— 39. Eadem a latere inferiori (situ 1/2.)	— 39. Sternum cum claviculis, cum parte sternali costarum pectoralium, costis abdominalibus, et cum ossibus pubis, a latere inferiori.
— XII. Eiusdem testudinis testa dorsalis, et		— 40. Eiusdem pars dextra a latere externo.	— 40. Anus cum duobus glandularum orificiis oblongis.
		— 41. Scapula, furcula et clavicula (os inferius, dilatatum.)	— 41. Mentum cum duobus glandularum orificiis.
		— 42. Spinae dorsalis pars anterior a latere inferiori.	Nota. Figure 5 — 41 e <i>Champsia nigra</i> . Fig. 42. Sceletum <i>Champsiae sclerops</i> .
		— 43. Vertebrae colli duae conjunctae sibi, a latere.	
		— 44. Eadem, superne.	
		— 45. Cauda cum ano <i>Testudinis tabulatae</i> pullae.	
		— 46. Oculi <i>Testudinis</i> cum membrana nictitante.	
		— 47. Nasus <i>Testudinis tabulatae</i> .	

FIGURE 2b. Back side of the "Explicatio Tabularum" of Wagler's atlas folio (Wagler 1830b). The figure legends include species names and short descriptions of each figure of the seven copper plates.

the “Explicatio Tabularium” for Tab. I. Fig. 1–23 (Wagler 1830b). A similar case is that the turtle species name *Kinosternon hirtipes* was established in the atlas folio (Wagler 1830b), not in the text (Wagler 1830a) as indicated in TTWG (2014: p. 348 and earlier editions), nor in Wagler (1833) as said by Fritz and Havaš (2007: p. 252).

Wagler’s (1830b) folio also contains additional new species combinations (including variant spellings), all of which have been overlooked in the literature until now. For example, the turtle genus *Podocnemis* was first introduced by Wagler (1830a: p. 135), but the combination *Podocnemis expansa* (derived from *Emys expansa* Schweigger 1812: p. 299) can be found only in Wagler (1830b: Expl. Tab. for Tab. IV. Fig. I). As another example, the new name combination *Chelys*

*Matamata* (Bruguière), a synonym of *Chelus fimbriatus* (Schneider) was originally established in the folio (Expl. Tab. for Tab. III. Fig. I), and not in Gray (1831: p. 17) as cited in Fritz and Havaš (2006: p. 189, 2007: p. 327).

The turtle lists in Fritz and Havaš (2006, 2007) and the Turtle Taxonomic Working Group (TTWG), beginning with Rhodin et al. (2008) through the latest effort (TTWG 2014), have consistently cited the incorrect Wagler publication for the introduction of the turtle name *Dermatochelys porcata*. All but the last mentioned publication credited “Wagler (1833)” for the introduction of that species name. The TTWG (2014: p. 345), in an effort to correct their earlier errors, cited the “explicatio tabularum” for the origin of the name *D. porcata*, but thought it was published in Wa-

**Table 1.** Scientific names of turtles and crocodiles in original spelling according to the “Explicatio Tabularum” in Wagler (1830b) along with their current taxonomy. In cases where Wagler used a derived grammatical form of a name, the normal form is given in squared brackets. 1 = Fritz and Havaš (2007); 2 = TTWG (2014); 3 = both of those turtle lists (but synonymies more complete in Fritz and Havaš); 4 = Wermuth and Mertens (1996). References to the publications cited only in this table can be found in one of the just mentioned references. All listed references were examined for confirmation.

Name in Wagler (1830b)	Current Taxonomy
“ <i>Chelonia Caouana</i> SCHWEIGG.”	3- <i>Caretta caretta</i> (Linnaeus 1758:197)
“ <i>Testudinis coriaceae</i> LINN.” [ <i>Testudo coriacea</i> ]	3- <i>Dermochelys coriacea</i> (Vandelli 1761:2)
“ <i>Dermatochelys porcata</i> ”	3- <i>Dermochelys coriacea</i> (Vandelli 1761:2)
“ <i>Aspidonectes javanicus</i> ”	3- <i>Amyda cartilaginea</i> (Boddaert 1770:3)
“ <i>Aspidonectis gangetici</i> ( <i>Trionygus gangetici</i> DUVAUCELII CUV. Rech. sur les oss. foss. T. V. P. II. p. 222)” [ <i>Aspidonectes gangeticus</i> ]	1- <i>Aspideretes gangeticus</i> (Cuvier 1825:203) or 2- <i>Nilssonsonia gangetica</i> (Cuvier)
“ <i>Aspidonectis nilotici</i> ” [ <i>Aspidonectes niloticus</i> ]	3- <i>Trionyx triunguis</i> (Forskål 1775:ix)
“ <i>Aspidonectis</i> (?) <i>carinati</i> ( <i>Trion. carinat.</i> GEOFFR.)” [ <i>Aspidonectes carinatus</i> ]	3- <i>Apalone ferox</i> (Schneider 1783:330)
“ <i>Trionyx coromandelicus</i> GEOFFR. ( <i>Testudo granosa</i> SCHOEPPF.)”	3- <i>Lissemys punctata</i> (Bonnaterre 1789:30)
“ <i>Pelomedusa galeata</i> ( <i>Test. gal.</i> SCHOEPPF.)”	2- <i>Pelomedusa subrufa</i> (Bonnaterre 1789:28)
“ <i>Chelys Matamata</i> ”	3- <i>Chelus fimbriatus</i> (Schneider 1783:349)
“ <i>Hydromedusa Maximiliani</i> ( <i>Emys Maximiliani</i> MÜLL.)”	3- <i>Hydromedusa maximiliani</i> (Mikan 1825: unpaginated)
“ <i>Rhinemys rufipes</i> ( <i>Emys rufipes</i> SPIX.)”	3- <i>Rhinemys rufipes</i> (Spix 1824:7)
“ <i>Podocnemis expansa</i> ( <i>Emys expansa</i> SCHWEIG.)”	3- <i>Podocnemis expansa</i> (Schweigger 1812:299)
“ <i>Platemys canaliculata</i> ( <i>Test. planiceps</i> SCHOEPPF.)”	3- <i>Platemys platycephala</i> (Schneider 1792:261)
“ <i>Clemmys caspica</i> ( <i>Emys caspica</i> SCHWEIG.)”	3- <i>Mauremys caspica</i> (Gmelin 1774:59)
“ <i>Clemm. punctatae</i> ( <i>Test. punct.</i> SCHOEPPF.)” [ <i>Clemmys punctata</i> ]	3- <i>Clemmys guttata</i> (Schneider 1792:264)



gler (1830a), not realizing the folio was issued as a separate book (Wagler 1830b). Thus, our examination of Wagler’s (1830a, 1830b) works demonstrates, that the turtle genus name *Dermatochelys* was established in Wagler (1830a) and the species name *D. porcata* was established in Wagler (1830b). Wagler (1833), in his third part of “Descriptiones et Icones Amphibiorum,” established and provided a redescription of several turtle species (i.e., *Staurotypus triporcatus*), but *Dermatochelys porcata* was not mentioned in any of the three parts of “Descriptiones et Icones Amphibiorum,” despite Wagler (1833) being considered the original source for the name *D. porcata* in most recent turtle lists of the world. The TTWG, beginning with Rhodin et al. (2008) and through the most recent turtle list (TTWG 2014), also thought the “Descriptiones et Icones Amphibiorum” was published in 1833, but that work was actually published in three parts during 1828, 1830, and 1833 (see Adler 2014: p. 24).

In conclusion, Wagler (1830a) did not establish any new species names, but several new species names were established in his atlas folio (Wagler 1830b). We also demonstrate that Wagler’s folio was published as a separate book with an independent title and scientific content. We therefore suggest to specifically credit the folio (Wagler 1830b) as the reference for the turtle and crocodile species names as they were established therein, and not in his text volume (Wagler 1830a).

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Table 1. Continued ...

Name in Wagler (1830b)	Current Taxonomy
“ <i>Emys europaea</i> ”	3- <i>Emys orbicularis</i> (Linnaeus 1758:198)
“ <i>Cinosternon hirtipes</i> (vid. Syst. p. 137)”	3- <i>Kinosternon hirtipes</i> (Wagler 1830b: Expl. Tab., Tab. V. Fig. XXIX, XXX.
“ <i>Cinost. scorpioidei</i> (Em. scorp. SCHWEIG.)” [ <i>Cinosternon scorpioides</i> ]	3- <i>Kinosternon scorpioides</i> (Linnaeus 1766:352)
“ <i>Staurotypus triporcatus</i> ( <i>Terrapene triporcata</i> WIEGM.)”	3- <i>Staurotypus triporcatus</i> (Wiegmann 1828:col. 364)
“ <i>Chelydra lacertina</i> SCHWEIG.”	3- <i>Chelydra serpentina</i> (Linnaeus, 1758:199)
“ <i>Phrynops Geoffroyana</i> ( <i>Emys Geoffr.</i> SCHWEIG.)”	3- <i>Phrynops geoffroanus</i> (Schweigger 1812:302)
“ <i>Testudinis radiatae</i> ” [ <i>Testudo radiata</i> ]	3- <i>Astrochelys radiata</i> (Shaw 1802:22)
“ <i>Testudinis graecae</i> ” [ <i>Testudo graeca</i> ]	3- <i>Testudo graeca</i> Linnaeus (1758:198)
“ <i>Testudo Boiei</i> ”	3- <i>Chelonoidis carbonaria</i> (Spix 1824:22)
“ <i>Testudo tabulata</i> (Test. denticulate LINN.)”	3- <i>Chelonoidis denticulata</i> (Linnaeus 1766:352)
“ <i>Testudinis indicae</i> ” [ <i>Testudo indica</i> ]	1- <i>Cylindraspis indica</i> (Schneider 1783:355)
“ <i>Champsia sclerops</i> (Croc. scler. SCHN.)”	4- <i>Caiman crocodilus</i> (Linnaeus 1758:200)
“ <i>Champsiae nigrae</i> ( <i>Caiman nig.</i> SPIX)” [ <i>Champsia nigra</i> ]	4- <i>Melanosuchus niger</i> (Spix 1825:3)
“ <i>Crocodylus biporcatus</i> ”	4- <i>Crocodylus porosus</i> Schneider (1801:159)
“ <i>Crocodili nilotici</i> ” [ <i>Crocodylus niloticus</i> ]	4- <i>Crocodylus niloticus</i> Laurenti (1768:53)
“ <i>Ramphostoma tenuirostre</i> ( <i>Gavialis tenuirostris</i> CUV.)”	4- <i>Gavialis gangeticus</i> (Gmelin 1789:1057)



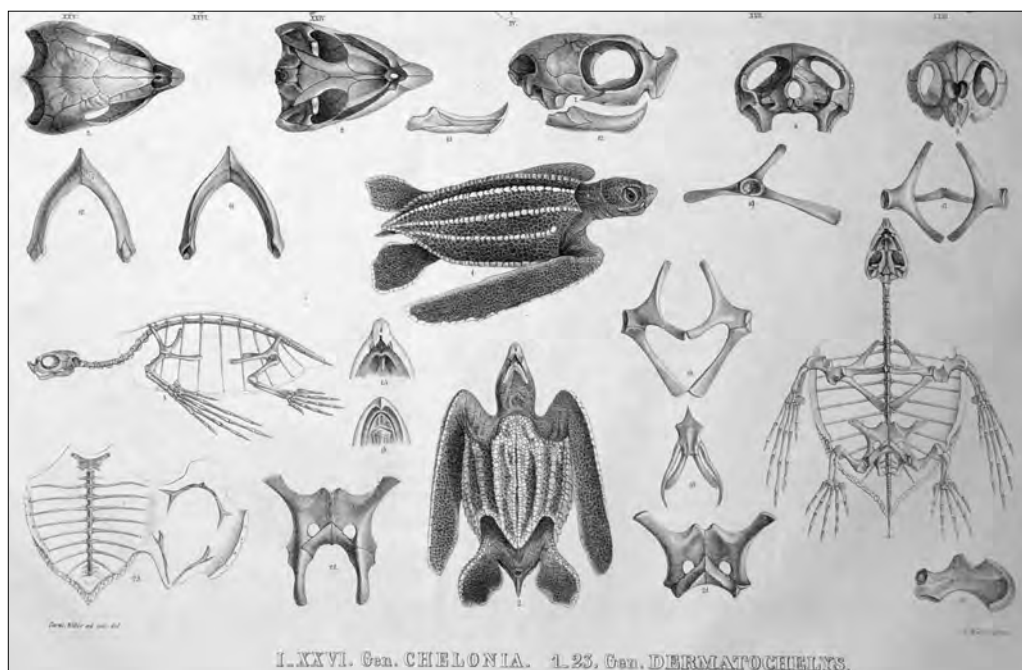


**FIGURE 3.** Page 133 of the text book “*Natürliches System der Amphibien*” (Wagler 1830a) with the introduction of the new turtle genus name *Dermatochelys* (highlighted).

(Deutsches Literaturarchiv Marbach) supplied copies of the correspondence between J. Wagler and his publisher J. F. Cotta, and Elke Bannicke (Münzkabinett, Bode-Museum Berlin) helped with the historical currencies of the books. Bernhard Schurian (Museum für Naturkunde) prepared a digital copy of the Wagler (1830b) atlas folio which is deposited in the Herpetological Department of the Museum für Naturkunde.

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**FIGURE 4.** Detail from plate 1 (Tab. 1) of Wagler's atlas folio (Wagler 1830b) with figures 1–23 showing bodies, shells and skeleton parts of the turtle *Dermatochelys porcata*.

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## Book Review

### A Dame Full of Vim and Vigor.

#### A Biography of Alice Middleton Boring: Biologist in China.

Marilyn Bailey Ogilvie and Clifford J. Choquette, 1999.

Amsterdam (Harwood Academic Publishers), 217 pages.

Originally \$ 90.00. 16 B & W photographs.

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Until rather recently, herpetology has been a discipline whose practitioners have almost entirely been men. Of the 786 biographies in Adler's *Contributions to the History of Herpetology* (1989, 2007, 2012), only 27 (3.4%) are of women. This small fraction is not due to bias in Adler's choice of biographies; there simply were few women scientists throughout much of the history of science, and fewer still who took up the study of amphibians and reptiles, especially in field biology. Of those few pioneers, Alice Middleton Boring stands out not only for the quality of her research, but also because of where, when, and under what circumstances much of it was carried out. Although Adler (1989) includes a brief biography of Boring, Ogilvie and Choquette's biographical account provides a wealth of additional information concerning the life of this remarkable scientist.

Alice Middleton Boring was born in Philadelphia on 22 February 1883 to Edwin M. Boring, a pharmacist, and Elizabeth Garrigues Boring, whose father was also a well-known pharmacist and Edwin's partner. The Borings believed strongly in the value of education for all children. Alice's brother, Edwin G. Boring (Ph.D., Cornell), became an experimental psychologist at Harvard and sister Lydia became a Latin and classics teacher. A third sister, Katherine, did not graduate from college. Alice was brought up in a family with strong Moravian and Quaker religious influences, but according to Ogilvie and Choquette, she nevertheless came to loathe religious hypocrisy in favor of a

"broader, more humanitarian approach to life." Her ability to transcend prejudices of the day towards women in science undoubtedly was a manifestation of her unconventional upbringing by much of late 1800s society's standards, as well as her determined character. A strong belief in education for all people, coupled with Quaker-based ethics and pacifism, shaped her life, influenced her later-life career decisions, and surely facilitated her long stint in China under some very trying circumstances.

Boring's career was marked by early academic excellence. She attended Bryn Mawr College, one of the leading colleges of higher learning for women. The first U.S. college to award a Ph.D. to a woman, Bryn Mawr provided a strong academic and hands-on research experience at the undergraduate level. There, she served as research assistant to Nobel laureate geneticist Thomas Hunt Morgan, from whom she learned developmental biology research techniques. By the time she graduated (A.B., 1904), she had authored one paper on developmental biology and a second co-authored with Morgan on frog embryo cleavage. She continued on at Bryn Mawr for her Master's degree (1905) under supervision of Nettie Stevens, focusing on physiology and morphology and resulting in two co-authored publications with Stevens.

In 1905-1906 she moved to the University of Pennsylvania to begin her Ph.D. under the direction of Edwin Conklin, but his departure for Princeton shortly thereafter led her to ap-

ply to Bryn Mawr's Ph.D. program. Her program of study focused on general questions of physiology and morphology, specifically spermatogenesis. She received her Ph.D. in 1910 again under the direction of Nettie Stevens (note that Altig, 2012 and previous editions, incorrectly states her major advisor was Morgan, although he had left for Columbia by that time). In fact, she completed her dissertation in 1908, but a year at Vassar College as an Instructor and a two-semester extended research Garrett Fellowship to Würzburg, Germany, and the Marine Biological Station in Naples, Italy, postponed the award of the degree until 1910.

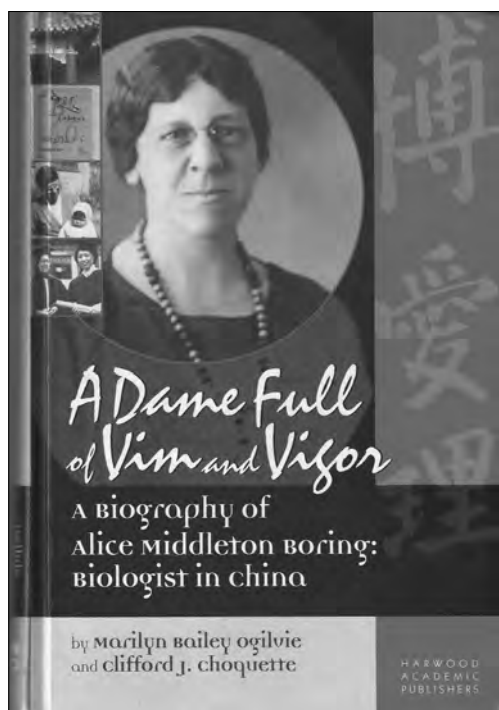
From 1910-1918, Boring worked her way through the academic ranks at the University of Maine Agricultural Experiment Station, eventually being appointed as an Associate Professor. Her experimental research continued, but now moved to cytological and histological questions regarding domestic animals rather than plankton and invertebrates. Ogilvie and Choquette indicate that Boring found a collegial atmosphere at the University of Maine in which she was held in high esteem for her research and teaching. But something apparently was missing from Boring's career – an ability to set her own course outside the classroom and not be hemmed in by the strict conventions then afforded to women scientists of the time. Ogilvie and Choquette state that “tension between decorum and impropriety, tradition and innovation surfaced throughout her life.” In 1918 she left a secure, tenured position to accept a two-year temporary appointment as Assistant in Biology at Peking Union Medical College at an annual salary of \$1,200. She was to remain in China, mostly at Yenching University (later incorporated into Beijing University), until August 1950, with short-term appointments at Wellesley (1920-1923), Columbia University (1944-1945), and Mount Holyoke (1945-1946) in addition to extended furloughs. However, it is clear from Ogilvie and Choquette's review that Boring's heart remained in China and with her students there.

The majority of *A Dame Full of Vim and Vigor* takes place in China and chronicles Boring's life during the tumultuous decades of the 1920s-1940s. She was instrumental in establishing the biology curriculum at newly-established Yenching University and in teaching and mentoring thousands of students who eventually formed the core of modern medicine and biological science in China. She was a charter member of the Peking Natural History Society, founded in 1925. At the same time, civil war between competing warlords, demonstrations, and unrest raged in and around the university, especially in 1919, 1925-1927, and in the years immediately preceding WWII. Often, competing armies fought around or in the university compound, yet Boring and the other professors sought to maintain an “education as usual” approach and to try to stay out of politics. Boring was not always successful at doing so, as she had strong opinions and invariably supported the students in matters of colonialism and the future of China.

Boring remained in Japanese-occupied Peking (Beijing) throughout the early years of WWII essentially under house arrest. She and the other foreign faculty were eventually interred with other civilians in March 1943 at Weihsien (Shandong Province). She returned to the United States in the autumn of 1943 having been exchanged with other civilians through the efforts of neutral Switzerland. In 1946, Boring returned to Yenching where she remained until 1950, when the communist authorities made it clear that foreigners were no longer welcome. As Ogilvie and Choquette state, “her life's work would be, in essence, finished” upon leaving China. Although she received a brief appointment at Smith College (1951-1953), she never resumed research. Alice Boring died in Cambridge, Massachusetts, on 18 September 1955 of a cerebral thrombosis.

Of particular interest to herpetologists is Boring's pioneering work on amphibians, began after she assumed the teaching position in Yenching. Although she had made substantial contributions to experimental developmental





**FIGURE 1.** *A Dame Full of Vim and Vigor*. A Biography of Alice Middleton Boring: Biologist in China.

biology and cytology, Ogilvie and Choquette imply that Boring likely felt hemmed in by the overwhelming masculine dominance in these fields. Even as a tenured associate professor, she tended to follow a research program guided by the interests of department chairman Raymond Pearl rather than setting her own course. Ogilvie and Choquette state that she envied the theoretical insights of her advisor at Bryn Mawr, Nettie Stevens, but did not consider herself similarly intuitive.

Her tenure in China was liberating; she was able to pursue research, free of western academic strictures and hierarchy and, fortunately for herpetology, began setting the foundations of modern Chinese herpetology by someone who actually resided there. The authors do not give an answer to: “Why amphibians and reptiles?” They note that Clifford Pope consulted with her during the Asiatic Expeditions of the 1920s (Andrews, 1932; Pope, 1935) and that Alice was adept at descriptive biology, so

perhaps the availability of amphibians and the almost complete lack of understanding of their taxonomy and life history offered her an opportunity to combine a curious intellect with teaching Chinese students scientific methodology. She mentored a number of important Chinese herpetologists, including C.-C. Liu, H.-P. Ting (now Ding), and T.-K. Chang, and exchanged specimens and corresponded with Pope, L. Stejneger, K.P. Schmidt, and G.A.C. Herklots, among others. During furloughs, Boring would visit museums in the U.S. to consult with specialists and examine specimens. To ensure that colleagues in far distant lands knew of her findings, she sent copies of reprints to specialists all over the world (Figure 2). It is hard to imagine that Boring’s most significant work (Boring, 1945) was written while she was interned by the Japanese in 1943.

*A Dame Full of Vim and Vigor* consists of 9 chapters covering Boring’s life and career; each chapter has an extensive series of notes. Included are 16 black and white photographs of Boring, her family, mentors and students, as well as *Vibrissaphora boringii*. There is a bibliography of Boring’s scientific publications, of which 22 (of 48) are herpetological in nature, mostly involving amphibians. I have located one additional publication not mentioned (Gee and Boring, 1930). Ogilvie and Choquette’s account of Boring is crisp and well-organized. There is a wealth of background material not only on Boring, but also on family, Chinese, and colonial history that set the context of personal events that transpired. In correspondence with me, Marilyn Ogilvie wrote of her “Boring book,” but this is definitely not the case!

Although Boring may not have considered herself experimentally insightful, her papers contain detailed insights into amphibian biology. Trained to be a careful observer, she made important contributions to Chinese amphibian taxonomy, biogeography, and life history. Ogilvie and Choquette do not go into detail concerning Boring’s herpetological contributions. Instead, they provide the context of her

research career, coupled with insights into the scientist and her contributions beyond a narrow herpetological interest. I, personally, find the societal context of science fascinating, yet it is a subject frequently overlooked. Despite great physical hardships and political uncertainty, how and why do some scientists still chase frogs? Although not answered directly by the authors, the reason may lie between the lines of *A Dame Full of Vim and Vigor*. The animals are there; we like them; we want to know more about them; we (herpetologists) are often unconventional; and we simply can. Boring's story deserves to be read by herpetologists interested in the history of their profession. It is a pity this book is not more widely known, and that it is so expensive (but check book search web sites for cheaper copies). The book certainly is a worthy contribution in the Women in Science series of Harwood Academic Publishers.

## ACKNOWLEDGMENTS

I thank Marian Griffey for comments on the text.

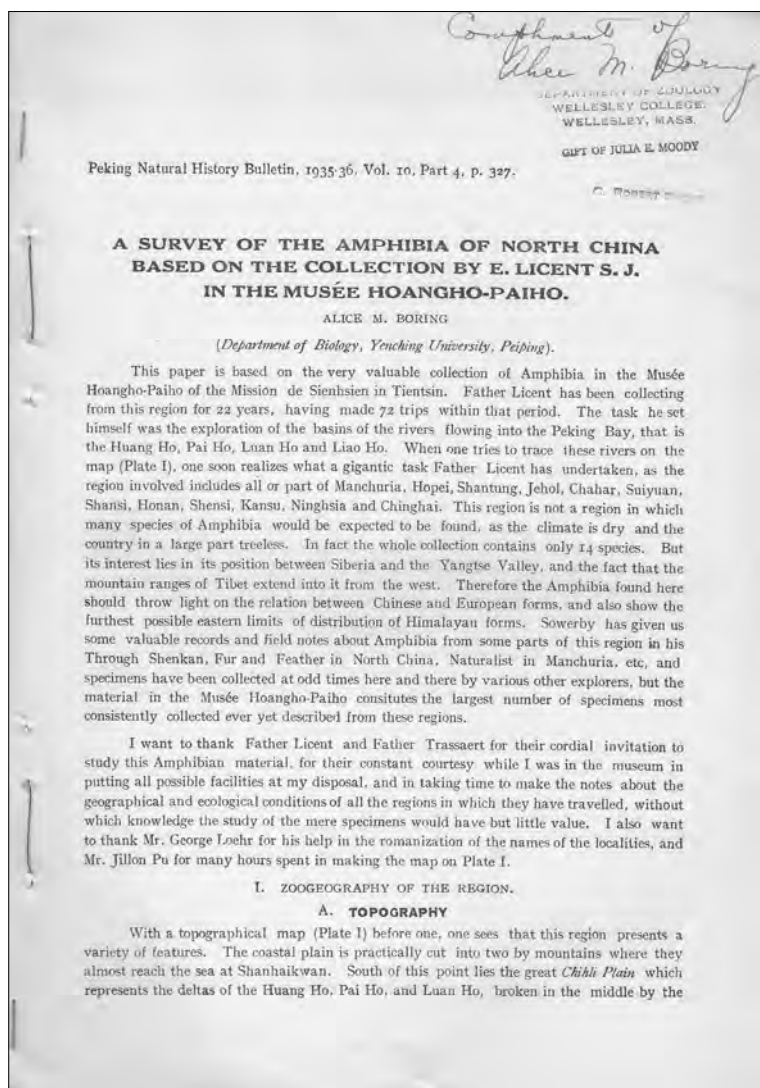


FIGURE 2. Reprint distributed by Boring to keep colleagues abreast of her research. Author's collection.

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## Book Review

### Herpetology in Bonn.

Wolfgang Böhme, 2014.

Mertensiella (Deutsche Gesellschaft für Herpetologie und Terrarienkunde e.V.), volume 21. Pp. I-VI, 256. Softcover, in quarto. ISSN 0934-6643 and ISBN 978-3-945043-02-8. Available for € 29.80.

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The author of the book was the co-supervisor of my diploma thesis in 2010 and I even was somehow involved in the preparation of a part of the book (chapter 2.1). A book review consequently hardly could be more biased than this one, but I decided to write it anyway, although I will keep it brief.

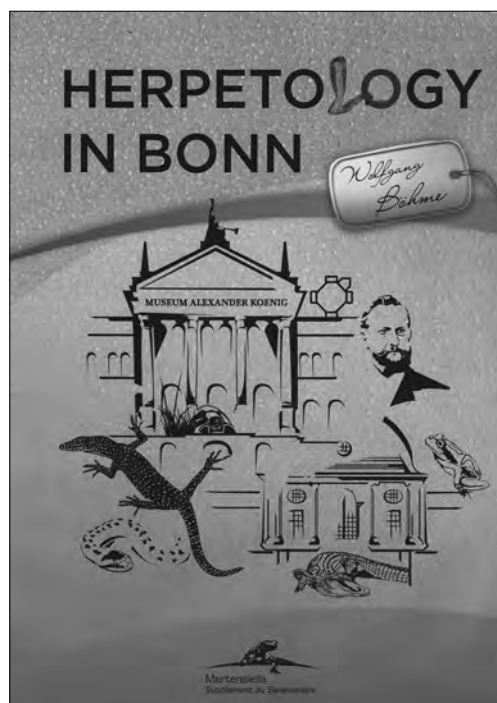
The book provides the history of herpetological research in Bonn from its roots in the early 19<sup>th</sup> century until the present day. Wolfgang Böhme was the curator for herpetology at the *Zoologisches Forschungsmuseum Alexander Koenig* (ZFMK) in Bonn (Germany) for 39 years, continually serves there after his retirement on a voluntary basis, and doubtlessly left his marks on herpetology in Bonn like no one before him. Who could have been more suitable to write a book entitled *Herpetology in Bonn*?

It appeared as volume 21 of the *Mertensiella* series, which is the supplement to the *Sala-*

*mandra*, the official journal of the *Deutsche Gesellschaft für Herpetologie und Terrarienkunde* (DGHT). With the exception of an extremely rare edition of ten copies in hardcovers distributed exclusively by the author, the book regularly comes as a softcover edition only. This was – at least in part and in addition to constraining financial issues – due to the circumstance that this *Mertensiella* volume was published timely on the occasion of the 50<sup>th</sup> annual meeting of the DGHT, which took place in Bonn during October 2014. The book has a total of 194 color as well as black and white figures and exhibits a principal division into eight parts: 1. Introduction, 2. Research on amphibians and reptiles in Bonn, 3. Museum Koenig (ZFMK) and its herpetological collections and activities, 4. Type catalogue, 5. ZFMK and scientific organisations; symposia, 6. ZFMK and teaching and education in herpetology, 7. Conclusive summary of herpetological activities in Bonn, and 8. Outlook and epilogue. Each of

these chapters (except for the outlook) comes with its own list of references, making browsing them much more convenient for the reader, especially in light of the long (23 pages) list of references that accompanies the type catalog. Kraig Adler wrote the Preface (pp. V-VI).

The book starts with a discussion of the various levels of and approaches to herpetology that range from alpha-taxonomic work over physiological studies to conservation issues (chapter 1). Interesting is the illustrated development and also the shift of the research focus between the two main centers of herpetological research in Bonn: the *Rheinische Friedrich-Wilhelms-Universität Bonn* and the ZFMK. While the university has its roots deep in taxonomy and comparative anatomy and is firmly connected with well-known names such as Georg August Goldfuß, Johannes Peter Müller, Franz Hermann Troschel and Franz Leydig, these traditional disciplines continue to diminish there and today definitely are on the brink of extinction. Herpetological research continues to some extent also at the university, especially in palaeoherpetology, but the ZFMK doubtlessly has taken over the lead, at least when it comes to extant taxonomy and related disciplines. The corresponding two parts of the book (chapters 2 and 3) introduce the personalities that undertook (and undertake) the research in Bonn and highlight their main research agendas. While herpetology was a key factor at the university already from its foundation in 1818 (and present in Bonn actually already before that), it was carved out of a rather miserable existence at the historically ornithology-focused ZFMK during the middle of the 20<sup>th</sup> century. Nonetheless, as last but not least evidenced by the impressive annotated and partly illustrated type catalog (chapter 4) that covers 339 name-bearing primary types, as well as numerous additional secondary types, it constantly has grown there. While already the part on the development of herpetological research at ZFMK (chapter 3) and to some extent certainly also the type catalog have a prominent autobiographical touch, the final parts provide an even more personal glimpse at Wolfgang Böhme, his research in-



terests and also his “academic heirs”.

A book of that length and scope never comes without certain shortcomings or small mistakes. For instance, several of the in general attractive and largely previously unpublished photographs would have benefited a lot from some additional digital editing (e.g. knocking out some of the backgrounds etc.). But that is not at all the point, as the intention of the book was not to provide a collection of shiny photographs. The book provides a well-made snapshot in time of an ongoing history and it remains interesting to see how herpetology in Bonn will develop in the future. Not only because of the moderate price of 39.80 euro at <http://www.dgthshop.de> (29.80 euro at Chimaيرا.de), I am convinced that this book will serve the historically interested and the practical taxonomist alike as an absolutely indispensable reference work of what happened in Bonn in terms of herpetology in its broadest sense over the past two centuries.



## Illegal Philatelic Issues in the Name of the Republic of Rwanda, Depicting Sri Lankan Snake Images

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The Republic of Rwanda, a landlocked country in east-central Africa, is bordered by Uganda, Burundi, the Democratic Republic of the Congo, and Tanzania. The first philatelic materials known from the country were from German East Africa, until after World War II and conquest by Belgium. Postal usage of stamps indicated as from Ruanda-Urundi were then issued, up to the time of independence in 1961.

On 1 April 2003 (also, All Fool's Day), an unknown agency, probably based in eastern Europe, produced a series of two labels, purportedly to be philatelic in nature, in the name of the Republic of Rwanda. They exclusively depict species of snakes found in Sri Lanka, images of which have been used without permission from watercolors executed by the third author of this note. With the exception of one image, these were published in a folio volume by the second author (de Silva 2009), the images previously available at the third author's personal website.

The contents of the series include a miniature sheet and a souvenir sheet. The first item (Fig. 1) comprises a single label, the miniature sheet measuring 99 x 94 mm, the label itself, 51 x 44 mm, and depicts the Sri Lankan Green Pit Viper, *Trimeresurus trigonocephalus*, with a face value of 500 Rwandan Francs. On the bottom of the sheet are the words "The Wildlife Trusts", and a matching logo of the Wildlife

Trusts, showing the European Badger, *Meles meles*. The borders of the sheet show a xanthic *Boa constrictor*.

The souvenir sheet (Fig. 2) measures 137 x 109 mm, and comprises six labels, each measuring 38 x 43 mm, and features six species of snakes. The face values shown are 100 Rwandan Francs for the three stamps printed in the left column (showing *Dryocalamus nympha*, *Trimeresurus trigonocephalus*, and *Aspidura trachyprocta*) and 200 Rwandan Francs for the three stamps in the right column (featuring *Xenochrophis piscator*, *Hypnale hypnale*, and *Lycodon striatus*). Of these, only the image of *T. trigonocephalus* was not illustrated in de Silva (2009) but was printed earlier, in Jinasena's (1998) portfolio of snake paintings. Additionally, the images of *D. nympha*, *X. piscator*, and *H. hypnale* have been printed inverted, while the image of *A. trachyprocta* has been printed upside down. On the top of the souvenir sheet are the words "The Wildlife Trusts" and the same logo, and at the bottom are the words, "Protect Mother Earth". Additionally, the souvenir sheet is adorned with half-tones of numerous, and partial images of snakes in the form of a collage on the left and right margins of the sheet, that are also the work of Jinasena, the artist; all these were printed in the work of de Silva (2009). These images are as follows: left margin, top to bottom: *Oligodon sublineatus*, *Lycodon aulicus*, *Amphiesma stolatum*, and *Coelognathus hel-*

ena; right margin, top to bottom: *Xenochrophis* species, *Boiga ceylonensis*, *Coelognathus helena*, *Dendrelaphis bifrenalis*, and *Amphiesma stolatum*. Most of these images have been printed inverted, relative to the original paintings of Jinasena.

These labels can be found on sale online (including at eBay and Delcampe), retailing for about US\$1 for the miniature sheet and between US\$1–4 for the souvenir sheet. One dealer was even found selling “postally used” versions of the stamps from the souvenir sheet for US\$4.10, with a “Rwanda” cancellation (genuine postmarks/cancellations on stamps typically bear names of post offices of transit, rather than country names).

The Wildlife Trusts (<http://www.wildlife-trusts.org>), an independent charity, is a group of 47 individual Wildlife Trusts that cover the United Kingdom and the Isle of Man and Alderney, and is Britain’s largest non-governmental organisation involved in ecological restoration of land and sea. In response to our email enquiry to the Trusts’ head office for further information on these philatelic issues, we received a response from Belinda Grindrod, Receptionist with the Trust, that the organization is “not aware of any Wildlife Trust branded stamps (and) if any did exist, they would have been produced in the UK, as UK stamps as we are UK based charitable organisations and have no involvement in conservation outside the UK”. Standard stamp catalogues (including those of Stanley Gibbons and Scott) do not list these stamps, as expected of such issues (termed “Cinderella”), and defined by Mackay 2003, as “Virtually anything resembling a postage stamp, but not issued for postal purposes by a government postal administration and therefore usually omitted from the standard catalogues.”

In response to the aforementioned philatelic issue depicting Sri Lankan snakes, the postal agency of Rwanda wrote the following to the Universal Postal Union (UPU), an agency

within the United Nations that coordinates postal policies among member nations, in addition to the worldwide postal system, that was published in its International Bureau Circular (McKeown 2003), distancing itself from the products and possible charges of copyright infringements:

“This is to apprise Universal Postal Union member countries and the World Association for the Development of Philately of the piracy that is again being perpetrated against Rwanda Post through the issue and sale of illegal postage stamps bearing the word ‘Rwanda’.

Unidentified, unscrupulous individuals are seeking to discredit our country by circulating postage stamps that they claim have been issued by Rwanda. This situation is even more reprehensible since it reflects badly on Rwanda’s moral and economic integrity. As the only body authorized to issue and disseminate postage stamps under Rwandan law, the National Post Office deplores this usurpation of its rights and condemns these shameful actions which undermine the reputation and tarnish the image of Rwandan philatelic products. We therefore ask the postal administrations of Union member countries and all their partners to support the efforts being made by the Rwandan postal administration to tackle this phenomenon which has a disastrous effect on our sector of activity. A non-exhaustive list of illegal postage stamps is annexed. We would like to take this opportunity to point out that philatelists wishing to receive information on Rwandan philatelic products should contact the National Post Office at the following address: National Post Office, P.O. Box 4, Kigali, Rwanda. Fax: (250) 514091; Tel: (250) 82703; (250) 516075. The Rwandan Post does not have a philatelic representative outside its territory.” The Rwandan Wildlife Trusts issues are listed thereafter.

Illegal issues of such labels by commercial enterprises or those printed for propaganda, is a major threat to postal revenue, can under-

mine the dignity of a nation's people, cause political instability, and damage the investment value of philately. It is arguably akin to bank note counterfeiting (stamps being readily convertible to currency), and possibly also, money laundering, and has been classified as organised crime (Pocock 1999; Winick 2002). Thematic stamp collecting is a major market in philately (topics being as specific as ships, trains, US Presidents, celebrities, and especially floral and faunal groups). Amphibians and reptiles are a popular thematic topic, and at least one specific catalog exists for these groups (that of Domfil 1992).

On 1 January 2002, the WNS (World Numbering System) was established by the World Association for the Development of Philately and the Universal Postal Union. This database lists all postage stamps issued by member countries and available to the public online (<http://www.wnsstamps.post/en>). Nonetheless, about 40 postal authorities of the Universal Postal Union are still not contributors to the WNS.

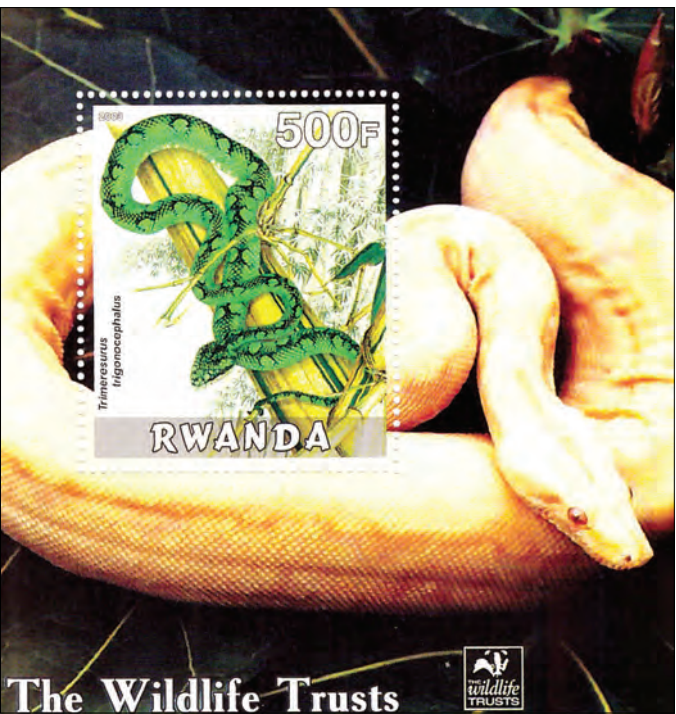
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**FIGURE 1.** Miniature selvage purportedly issued by Rwanda, depicting *Trimeresurus trigonocephalus*, a snake endemic to Sri Lanka on the label, and a xanthic *Boa constrictor* on the sheet. Both species are non-indigenous to Africa.



**FIGURE 2.** Souvenir sheet purportedly issued by Rwanda, depicting snakes (including *Dryocalamus nympha*, *Trimeresurus trigonocephalus*, and *Aspidura trachyprocta*, in the left column and *Xenochrophis piscator*, *Hypnale hypnale*, and *Lycodon striatus* in the right column) from Sri Lanka. All species are non-indigenous to Africa.







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